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AMERICAN JOURNAL OF ARCHAEOLOGY

Volume LIV
No. 1

JANUARY
1950

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The AMERICAN JOURNAL OF ARCHAEOLOGY, the Journal of the Archaeological Institute of America, was established in 1885; the second series began in 1897.

Entered as second-class matter at the Post Office at Menasha, Wisconsin. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized January 5, 1921.

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Subscriptions may be addressed to the publisher at 450 Ahnaip St., Menasha, Wis., or to the Assistant Secretary, Mrs. MIRIAM W. RICHMOND, Archaeological Institute of America, Andover Hall, Harvard University, Cambridge 38, Mass. Subscribers should inform the Assistant Secretary if they change their address or fail to receive the Journal.

Foreign subscriptions, \$8.00 per year, \$2.00 per issue.

Issued Quarterly	ANNUAL SUBSCRIPTION, \$7.50	Single Number, \$2.00
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A SMALL HOARD OF MYCENAEAN VASES AND STATUETTES¹

DAVID M. ROBINSON

PLATES I-VII

RECENTLY there has come into my collection at the University of Mississippi through a European dealer, a small hoard of five Late Helladic or Mycenaean vases and ten terra-cotta statuettes which were said to have been found together in a tomb on the island of Salamis. They were all covered with a similar thick incrustation of a hard white calcium and chalk deposit which I had some difficulty in removing. It seems certain, however, that the different pieces were found together.

First I shall speak of the vases. No. 1 (pl. II, A and B) is a small cyathus or one-handled cup, only 0.032 m. high, the diameter of the opening 0.05 to 0.054 m., and the sloping base 0.026 m. The cup is rudely made and does not sit well. It tapers upwards and outwards towards the handle which inclines downward, 0.02 m. high at the point of attachment. It projects 0.02 m. and is decorated with two black bands parallel with the sides of the handle. The cup is of buff clay, and its flaring sides are adorned with fifteen broad irregular vertical bands in brown glaze shading at times into black. In one or two cases the wriggly bands join before they reach the bottom of the vase and form a long triangle. The cup is similar in shape and style to one from Eleusis which also has the handle nearly even with the top. It is of similar reddish clay and decorated in bright red with parallel vertical leaf-like lines. The handle has similar thick parallel bands.² It was found by Skias on the south slope of the Acropolis at Eleusis and published in *Eph.*, 1898, p. 82, pl. II, 8, and by George Mylonas in *Kourouniotes*, *Ἐλευσινιακά*, I, 1932, pp. 123-124, fig. 103, no. 362. Others, nearly similar, all Late Helladic II, were found by Philios and Kourouniotes in the seventh and eighth Mycenaean tombs at Eleusis, the last undecorated, however.³ The shape and style occur already at Tarsus, *AJA*, li, 1947, pl. xcvi, 8 (1600-1450 B.C.).

No. 2 (pl. II, C). This is a cylindrical tankard like a baby's milk mug or feeding cup,⁴ of the "Vaphio Shape," in form resembling the famous gold cups found at Vaphio, several gold cups found at Mycenae, Asine, etc., and terra-cotta cups which are so common in Late Helladic settlements. It is a beautiful pleasing shape which developed under the influence of metal forms in Late Helladic I and II out of Cretan prototypes of the Vaphio shape, such as those in the Metropolitan Museum.⁵ The type occurs in Camares ware in Middle Minoan III and Late Minoan I times, and it is rare in Late Helladic III except in Crete. The Salamis cup is of light buff clay, 0.055 m. high, the opening 0.077 m., and the base 0.059 m. in diameter. It has a handle, painted brownish-black on the outside, which is attached at right angles below the top and above the base.⁶ Especially interesting is the perforation of the lip and the projecting spout (0.02 m. long and 0.02 m. wide), which is

¹ This paper was read with slides and an exhibit of the vases and figurines themselves at the annual meeting of the Archaeological Institute of America in St. Louis, Mo., Dec. 29, 1948.

² Ht. 0.034 m.; diam. of opening 0.05 m., and of base 0.022 m.

³ Cf. also *Deltion*, iii, 1917, p. 85, fig. 61, decorated with triangles and parallel vertical lines.

⁴ Cf. for shape, Furtwaengler-Loeschke, *Mykenische Vasen*, pl. XLIV, no. 96, and in general Karo,

Die Schachtgräber von Mykenai, pl. CLXXIII, 954; Blegen, *Prosymna*, i, p. 395; *Korakou*, p. 25, fig. 34, nos. 3, 7, 8, 9, 12; pl. III, 4; *B.S.A.*, xvi, 1909-1910, frontispiece (Keftiu cup); xxxviii, 1937-1939, pl. xxiv, 6; an unpublished one found by Mylonas in Attica at Hagios Cosmas.

⁵ 14.89.326; 31.438 (from Vasiliki, open spout); 07.232, 16 and 17 (Gournia), and several Middle Minoan cups from Cnossus.

⁶ 0.03 m. high and 0.01 m. wide.

decorated black on top. The spout of such a cup, as Blegen⁷ says, shows that the cup was used for pouring, like a lamp, but I do not see why he adds that it was not used for drinking. The nearest parallel is a similar beaker with a bridged spout in Blegen, *Prosymna*, II, p. 78, fig. 333, no. 734, with a similar decoration, but a horizontal instead of a vertical handle. The concave sides of the cup which flare out toward the top and bottom from the middle are adorned with two black bands near the base, with two narrow bands between them. Then, above an undecorated space of 0.012 m., is an irregular broad black band.⁸ Under the lip are three irregular low projecting annulets painted brownish-black (0.01 m. wide). The top of the rim with a metallic-like ridge inside and outside is also brownish-black and there is a brown band on the inside of the lip, passing above the spout (0.006 m. in diameter). The shape and style remind one of that published by Mylonas in *Ἑλεσινιακά*, I, p. 113, fig. 90, with broadened base and concave sides swelling out toward the top with a wide opening. But that cup is decorated with spirals above the three horizontal bands and is a little larger.⁹ Other parallels (but without spouts) are *Deltion*, III, 1917, p. 135, fig. 99, and Blegen, *Prosymna*, II, p. 17, no. 393; p. 20, no. 216. An exact parallel to such a shape, with a bridged spout, is difficult to find, but the Salamis cup evidently is Late Helladic II or III. *Prosymna*, II, p. 178, no. 696 has a similar spout through the unbroken rim, but it is of a different shape and style.¹⁰ For a similar-shaped mug cf. Wace, *Mycenae*, 1949, fig. 48c, from the "Treasury of Atreus." The shape was popular at the end of Late Helladic II, but occurs also in Late Helladic III.

No. 3 (pl. II, D; pl. III, A and B) is a false-necked stirrup vase or Bügelkanne, rather squat with a flattened top (type C). The height is 0.098 m., the greatest circumference is 0.039 m., the diameter of the base is 0.056 m., height of the spout is 0.035 m., length of stirrup is 0.075 m., its width is 0.011 m., the diameter of the convex solid round top is 0.028 m. The sides incline sharply outwards from the bottom upwards for 0.06 m. and then sharply inwards with a low convex profile for the same distance, 0.06 m. The clay is of the characteristic Mycenaean bright buff color. The decoration is in bright red shading to black on the three broad bands which encircle the lower half of the vase and on the five narrow bands between the upper two. On the circular top of the stirrup are a broad red band around the knob and then four narrower bands. The handles are painted solid red on the outside except for a small triangular space on top. The inside is left plain as is also the neck except for a bright red band at the base. The spout is also left plain except for red on the interior and exterior of the lip and a broad red band at the base. The bottom of the vase (pl. III, B) is plain except for two narrow black bands around the center. On the shoulder (pl. III, A) the decorative motive is limited to the upper zone divided by the handle and the spout into one large and two smaller panels. Above a red narrow band and then two red broad bands with four narrow ones between is an alternating conventionalized floral decoration or pattern of seven triangles one above the other, repeated five times, and a dotted rosette or circle with dots around it. In one case the symmetry is varied, and there is a dotted circle on either side of the spout and a series of triangles on either side of the handle to the left of the spout. If this vase, which makes a geometric impression, had not been found with other Late Helladic II vases and statuettes, we should have dated it Late Helladic III, but it is possible that such a low angular shape and such conventionalized decoration began in Late Helladic II. One finds such fish-scale-like triangles on a Mycenaean scyphus from Kolonaki

⁷ *Prosymna*, I, p. 428.

⁸ 0.007 m. to 0.01 m. wide.

⁹ 0.097 m. high and an opening 0.125 m. in diameter.

¹⁰ Cf. also *Prosymna*, II, p. 29, fig. 145, no. 254; p. 37,

fig. 168, no. 1136; p. 42, fig. 188, nos. 377-378; p. 80, fig. 345, no. 983 (Late Helladic II); p. 166, fig. 658 (Late Helladic I); p. 167, fig. 663.

at Thebes,¹¹ and on the top of a stirrup vase from Prosymna which Blegen¹² calls Late Helladic III. In the Metropolitan Museum, no. 450 in the first Greek room, is a peculiar three-legged vase from Cyprus of the late bronze age (1500-1200 B.C.) with a loop handle between two spouts, and decorated with five such superposed triangles. Often the number of parallel triangles is not the same as it is on our vase but varies from five to nine. In view of the few exact parallels, it is perhaps hard to say that such a stirrup vase is Late Helladic III rather than Late Helladic II. Blegen, *Prosymna*, I, p. 452, and others say that the stirrup vase does not occur on the mainland of Greece before Late Helladic III times, though we find it in Crete in Late Minoan IB. Cf. for example Wace, *Mycenae*, fig. 68a. Why this type was so late in reaching continental Greece, I do not know, but if the date is correct, our little hoard must date from Late Helladic III, though the ewer, to be considered below, no. 6, must be Late Helladic II.

No. 4 (pl. III, c; pl. IV, A and B) is a sturdy deep three-handled jar or amphora (often wrongly called a pithos), with an offset neck, wide flaring lip, and concave foot flaring outwards. It is much repaired. The clay is greenish buff with a smooth buff slip, and the decoration is in reddish or light brown glaze. The height is 0.25 m., of the neck, 0.045 m.; greatest diameter below the handle, 0.68 m.; greatest width across the top, 0.12 m.; of the base, 0.085 m.; rim, from 0.015 m. to 0.02 m. wide; handles, 0.055 m. wide at the base and 0.035 m. high. The distance between them is 0.12 m. The shape seems not to be Cretan in origin, though in the decoration there is influence of the Palace Style. It is the most common shape in the whole range of Late Helladic or Mycenaean pottery. The walls are thin and well-made. The base is sturdy but not a perfect circle and not meticulously shaped, with a slightly raised edge. The three loop handles are relatively thick with a longitudinal groove along the top, almost rectangular in section. The standard type begins in Late Helladic I.¹³ The decoration is arranged in a wide zone above circular bands and occupies most of the bulging surface of the vase. The pattern consists of a three-fold repetition, once in each space between the loop handles, of a large design like a heart-shaped leaf, what Evans calls the "sacral ivy."¹⁴ A gracefully curving stem bordered by dotted lines connects each heart-like leaf with its neighbor. Five rows of dots encircle the vase below the loop handles, two between them, and four above with traces of a spiral here and there. The neck is painted black inside and out, as are the broad rim and handles. Below the sacral ivy is a broad plain band (0.09 m. wide), and below that, three narrow black bands, and above the plain base, a broad black band (0.035 m. wide), which rises in three places into a curve. The whole effect, when the paint was preserved, must have been admirable.¹⁵

No. 5 (pl. V, A and B and the colored pl. I, which I owe to my Mississippi student, Miss Millicent Merritt) is a beautiful oenochoe or ewer, tapering out in a nice curve from the bottom to the middle of the vase and then in to the concave flaring neck (see colored drawing). It is a broad-bellied jug with a beaked spout. The height is 0.29 m., of the handle at

¹¹ *Deltion*, iii, 1917, p. 91, fig. 65, 3 (Ismenium at Thebes, five series of parallel angles); p. 127, fig. 90, 6 (Kolonaki); p. 191, fig. 136, 2; *Eph.*, 1910, pl. 4, nos. 6, 8, and 9; pl. 5, 3. For the pattern cf. Mrs. Stubbings, *BSA*, 42, 1947, p. 41, fig. 17.

¹² *Prosymna*, II, p. 188, fig. 720.

¹³ Cf. Blegen, *Prosymna*, I, p. 401, pl. V, no. 412; II, p. 19, fig. 106, no. 412.

¹⁴ *Palace of Minos*, II, pp. 478 ff. Cf. also Furumark, *The Mycenaean Pottery*, pp. 268 ff.

¹⁵ Cf. for similar vases, *Eph.*, 1910, pl. 10, 2 and 2a;

Deltion, iii, 1917, p. 84, fig. 60b; p. 89, fig. 64; p. 142, fig. 104; p. 143, fig. 105 (grave 9 at Kolonaki at Thebes); p. 144, fig. 106; p. 201, fig. 145 (grave 26 at Kolonaki at Thebes, similar to mine but with four heart-shaped leaves to the right and dotted crosses in the eyes of the spiral); cf. also *Hesperia*, xvii, 1948, p. 155, pl. xxxix, 2b and d; xlv, 2e (Mycenaean Chamber Tomb of the Areopagus P.17.638). For rows of dots on fragments from the palace cf. Wace, *Mycenae*, fig. 94, P.S.L.H.I.

the base, 0.10 m.; the greatest circumference is 0.79 m., the length from the top of the handle to the end of the spout is 0.142 m., the smallest circumference of the neck is 0.11 m., the breadth of the handle is 0.035 m. to 0.037 m., the diameter of the undecorated bottom is 0.077 m., the width of the spout is from 0.028 m. to 0.045 m., the interior width of the spout at the top is 0.018 m. It is of pale light buff clay with a whitish smooth slip. The decoration is in bright brownish red. At the bottom are a broad red band (0.035 m. wide) and then a narrower band (0.017 m. wide). About the neck are four bands (0.06 m. to 0.08 m. wide). At the base of the neck is a plastic ridge and at the base of the handle, a projecting knob, both of which show the influence of metal. Across the lower part of the spout there are three red bands, 0.012 m. to 0.02 m. wide. The inside of the spout near the outer edge, except at the outer end, and the whole top of the handle, with a raised ridge in the middle and a slightly concave depression on either side of the ridge, are painted solid red. The under side of the handle is left plain, except at the edges where there is a narrow band of brown-red glaze. The body is decorated with three somewhat conventionalized nautili or argonautae.¹⁶ Under the handle, instead of the usual wriggling streamers, we have a more decorative double one with four long loops on either side (somewhat worn on the left side). There are at least ten other such ewers of the same shape and with a beak-like spout and a plastic ridge at the base of the neck, with a similar nautilus design. These are from Sphettus or Markopoulo in Attica, Aegina, Thebes, and from Korakou, but ours ranks with the best. It is perfectly preserved and has never been broken. It is probably the finest example, certainly the best and only one in America.¹⁷ The neck has vertical and not horizontal bands on most of those cited in note 17; and the heart of the nautilus is not so conventionalized as in the Mississippi example. *Eph.* 1895, p. 257, pl. 10, 81,¹⁸ from Kopreza and one from Vourvatsi in Attica, are very similar, but the streamer under the handle has not the loops. The nautilus has three spirals but no heart such as ours has, one of the spirals taking its place. The ewer from Korakou¹⁹ has a similar plastic ridge at the base of the neck and a knob at the base of the handle, but the neck has vertical godroons and a floral design beneath it. The nautilus design is so conventionalized that it has only two spirals with a triangular design above and below the middle. Other good parallels to our ewer are one from Rhodes, Istituto storico archeologico, *Memorie*, ii, 1938, xvi, pl. xl; another from Rhodes (Camirus, Late Minoan III) in the Museum für Völkerkunde in Berlin;²⁰ and two

¹⁶ Cf. Reisinger, *Kretische Vasenmalerei*, p. 27; Furumark, *The Mycenaean Pottery*, pp. 306-308. My vase has three beautifully curving tendrils and a palmette-like heart or argonaut shell (a form not in Furumark, *op. cit.*, p. 50), with nine parallel triangles as on my stirrup vase, bordered in two cases at the outer edge by a row of dots.

¹⁷ Cf. *Deltion*, iii, 1917, p. 155, fig. 116, 2 (from Mycenaean grave 14 at Kolonaki at Thebes, the body mostly restored, the neck and spout entirely so); *ibid.*, pp. 83-84, no. 17, fig. 59b (Mycenaean grave 2 at Ismenium at Thebes); these have spirals or circles 0.27 m. below the plastic ridge at the base of the neck from which depends a necklace of small leaves; p. 94, fig. 68, 2 (4th Mycenaean grave at Ismenium; much restored but it also has circles below the plastic ridge); p. 199, fig. 143, 1 (ht. 0.31 m., perhaps Corinthian, from Mycenaean grave 14 at Kolonaki at Thebes).

Cf. also Furtwaengler-Loeschke, *Mykenische Vasen*, pl. ix, 54 (from Ialysus in Rhodes); *Deltion*, iii, 1917, p. 156, no. 29 (ht. 0.31 m.).

¹⁸ Ht. 0.27 m. Similar to ours in the color of the clay and glaze, but with only two nautili. This vase and one in the National Museum of Athens, 3765, and that from Vourvatsi (*BSA* 42, 1947, pl. 14, 3) are said to be the earliest from Attica (beginning of L. H. III) but mine is earlier, type B, not C, which has rid itself of metallic-like ridge, and rivet-like knob (i.e. p. 48, fig. 20B, p. 49).

¹⁹ Cf. Blegen, *Korakou*, pp. 49-51, fig. 69, pl. v (colored).

²⁰ Illustrated in Bossert, *Alt-Kreta*, fig. 194, ht. 0.30 m. with four cross bands on the spout, similar bands on the neck and at the bottom of the body and a nautilus similar to those on our vase, also the same kind of metallic-like ring at the base of the neck.

from Aegina illustrated in G. Welter, *Aigina*, Berlin, 1938, p. 23, fig. 26.²¹ The Salamis ewer certainly dates from Late Helladic II and well represents the keen sense of decorative effect which the potters and painters of that period could obtain before the pictorial became so abstract in Late Helladic III. The zonal system has been discarded in favor of a new palace style with spacial conception unhampered by limitations. The vases are better made and the walls of the vase thinner. The vase itself is better turned and the firing more even, the shape more rhythmical, and there is a studied simplicity in the decoration, as seen also in the jar illustrated above.

One further point should be considered, namely the origin of the spout which is like a bird's beak. This is often considered to be Hittite and it certainly occurs very early on Hittite vases.²² In the Oriental Institute in Chicago I have seen several such vases, and in the Metropolitan Museum I have noticed three or four large decorated Iranian "Schnabelkannen" or oenochae with a similar long spout, but these date around 1100 B.C.²³ Such spouts occur in Vasiliki vases from Crete.²⁴ Blegen, *Gonia*,²⁵ publishes an Early Helladic ewer (0.228 m.) from Yiriza, with a shape similar to ours, with a spout slanting upward, which even has a similar plastic collar about the base of the neck, suggestive of work in metal. So perhaps such a spout is not Hittite, but descended from Early Helladic or Middle Minoan prototypes. Even a similar nautilus design is found on such Minoan vases as the Late Minoan oenochoe (no. 113) of greenish clay from Egypt, which is now in the Borelli Museum in Marseilles, of which there is a good copy in the Metropolitan Museum,²⁶ and on another vase from Egypt, a similarly shaped oenochoe with similar designs which is now on loan in the Metropolitan Museum from the New York Historical Society.²⁷ The vase is an almost exact counterpart of that excavated at Psira in Crete in 1907 and published in the University of Pennsylvania, University Museum, *Anthropological Publications*, iii, no. 1, 1910-1914, "Excavations on the Island of Psira, Crete," by Richard B. Seager, 1910, p. 32, fig. 13, found in I.3. R.I. It is a very good example of the use made of marine designs, two nautili with three bands below them. On the neck and handle there is similar decoration to that on the New York vase. The designs of seaweed and rock work adapt themselves extremely well to the vase decoration. The shape betrays again a metal prototype as shown by the handle where the metal rivet fastening it to the body of the vase has been imitated

²¹ Palace style or Early Mycenaean, with more than 35 rows of dots as on our no. 1, perhaps by a Cretan potter working in Aegina; p. 25, fig. 29, an Aeginetan imitation of such a vase.

²² Cf. von der Osten, "The Alishar Hüyük," *OIP*, xxviii, pl. vi; *AJA*, li, 1947, pp. 385-386, pl. xcvi, 1-2 from Tarsus, period C. of pottery similar to that of older phases of the Hittite Empire, dark on light, highly polished surface, with a thin coating or burnished slip 1650-1450 B.C.

²³ Cf. for example, *BMAA*, vii, 1949, p. 194, a gray pitcher from Sialk, Persia around 1000 B.C. with a very long spout, the upper end curved into a small curl. Cf. also 39.60.9 and 47.32.2 (c. 900 B.C.).

²⁴ Hawes, *Gournia*, pl. xii, 7, 8; pl. B, also cf. for example, 07.232.14 in the Metropolitan Museum, or 11.186.11 from Knossos. Cf. also *Eph.*, 1939-1941, pp. 83-84, pl. 2, no. 2, from Sklavokampos in Crete; Evans, *Palace of Minos*, II, p. 437, fig. 254 (L.M.I.).

²⁵ *Metropolitan Museum Studies*, iii, 1930-31, p. 69, fig. 19j.

²⁶ L. 48.62 or 26.86.9; cf. Bossert, *Alt-Kreta*, 1937, fig. 559; Furtwängler, *Kleine Schriften*, II, pp. 120-121, reprinted from *AA*, 1893; Schnitzler, *Griechische Vasen*, 1948, pl. 1, pp. 8, 14, 16; Schmalenbach, *Griechische Vasenbilder*, 1948, pl. 5; Lane, *Greek Pottery*, 1948, pl. 1.

²⁷ Cf. Caroline Ransom Williams, *Catalogue of Egyptian Antiquities, Gold and Silver Jewelry*: 148, n. 4. Cf. Mrs. Dohan, "A Late Minoan Vase from Crete in the Abbott Collection," *Quarterly Bulletin of the New York Historical Society*, 12, 1929, pp. 127-133, 192; the date 1860 given by Mrs. Dohan is that of acquisition. The vase is listed in the Abbott Catalogue of 1853 (no. 77) and so was acquired between 1843 and 1852. Cf. Dinsmoor, "Early American Studies of Mediterranean Archaeology," *Proc. Am. Philosophical Society*: 87, 1943, p. 96, fig. 23; p. 103 "an importation from Crete at about 1500 B.C.," or perhaps even in modern times. The illustration in Dussaud, *Les Civilisations Préhelléniques*, p. 114, fig. 85 seems to have been forgotten.

in clay. Cf. also Seager, *loc. cit.*, p. 24, pl. vic, but both these vases have more ornaments and are more ornate, whereas mine is simple but dignified and beautiful.

Statuettes (Pls. vi and vii)

Along with the vases was found a cache of ten little graceful trifles or figurines of peculiar charm, terra-cotta statuettes of light buff clay, striped with bright red or brown or blackish glaze. They are of only two types, seven with a disk-shaped or oblong body, and three with crescent-shaped projections, often wrongly called wings, instead of arms, which point upwards like the horns of a moon-sickle. Such figurines with crescent-shaped bodies are usually interpreted as conventionalized representations of a figure in the attitude of supplication with both arms raised. Hundreds of such statuettes have been found at Mycenae, Tiryns, and so-called Prosymna,²⁸ Thebes, Eleusis, and elsewhere.²⁹ Tsountas in *Eph.*, 1888, p. 168, first distinguished three types, followed by Blegen, in *Prosymna*, i, pp. 355, ff. Professor Dinsmoor informs me that he found both these types on the west slope of the Acropolis and not in tombs. The third type with bell-shaped skirts and arms placed across the breasts is missing in the Salamis Series, but all types seem to date from Late Helladic III and to belong exclusively to the Greek mainland, with no prototypes in Crete or the islands. The one from Crete³⁰ was probably imported as was that dug up at Phylakopi.³¹

The first type has a cylindrical lower body whereas the upper is flat, round, or oblong with an ovoidal contour when seen from the front. The arms are not indicated separately but in a few cases are suggested as hanging down at the sides (as in one in *MMB*, iii, 1945, p. 241, but not in ours). This type rarely has a cap, but our nos. 4, 5, and 9 have a concave cylinder on top as if a cap were meant. In a few cases the figure carries a child, as in one in

²⁸ The real Prosymna may be at Berbati where the Swedes have found an important Mycenaean settlement.

²⁹ Cf. Schliemann, *Mycenae*, pp. 11 ff., figs. 8-11; pp. 72 ff. figs. 111-113, pls. A, B, C (nine from the Acropolis, pls. XVI-XIX, two hundred mentioned); *Tiryns*, pl. xxv; Winter, *Die Typen der figürlichen Terrakotten* i, p. 2, nos. 1-3; p. 3, nos. 1, 8; Blegen, *Prosymna*, i, pp. 106, 109, 256, 355 ff. (some 63 examples); ii, p. 36, fig. 167, nos. 1098, 1099; *Deltion*, iii, 1917, p. 127, fig. 90, 3 (from grave 1 of Kolonaki at Thebes, winged type, *πτερωτόν* 0.12 m. high); p. 137, fig. 101 from Thebes, hands on breasts and wearing a hat, 0.63 m. high, hollow cylinder with four series of parallel triangles as on my stirrup vase; p. 163, fig. 121, nos. 2 and 10; p. 169, fig. 123; p. 190, fig. 135, nos. 4, 6-10, nos. 7, 10 (four with hands on breasts, 0.06 m.-0.11 m. high, nine crescent-shaped, complete, five broken, 0.042 m.-0.11 m. high); Kourouniotes, *Ἐλευσινιακά* i, 1932, p. 141, fig. 117 (both types with cylindrical foot and hollow base, 0.105 m. high and 0.046 m. wide); no. 3 has parallel lines curving to the left, no hands, decorated like ours with parallel vertical straight or snake-like wavy lines in bright red or black. In no. 4 the breasts are just below the neck; no. 5 has hanging down the back a plastic narrow taenia as on

our no. 1, and there are no hands although some do have hands. Some six (four round-bodied and two crescent-shaped) I have noticed in the Metropolitan Museum, gifts of J. Brummer, along with a gilded terra-cotta statuette of a goat from Mycenae and a Mycenaean terra-cotta statuette of a bovine animal, Fletcher Fund, 35.11.16-19; and two illustrated by Miss Alexander in *BMM*, iii, 1945, p. 241 (22.22.15 and 36.11.17). In the Archaeological Museum at Bryn Mawr I saw another disk-shaped Mycenaean idol, the gift of Miss Swindler; and there are many other unpublished and published examples, too numerous to cite.

³⁰ *Mon. Ant.*, xii, p. 124, fig. 62.

³¹ Cf. *Excavations at Phylakopi*, pp. 202 ff., pl. xxxix, 13-22; Cf. also Rodenwaldt, *Tiryns*, ii, p. 7, note 6; Perhaps such ivory statuettes as in Blegen, *Prosymna*, p. 360, figs. 729-731, had some influence. Cf. also Blegen, *op. cit.*, ii, p. 54, fig. 236, "16 flat-bodied idols"; p. 64, fig. 272; p. 65, fig. 274, 278; p. 87, fig. 369 (four crescent-shaped idols); p. 112, fig. 457 (two crescent-shaped); p. 119, fig. 479 (five disk-shaped); p. 126, fig. 507 (eight disk-shaped); p. 138, fig. 557; p. 148, fig. 612 (two with hats, three with wings); p. 149, fig. 611 (six disk-shaped).

the Metropolitan Museum, which leads Nilsson³² to interpret many such figures as nurses. Schliemann (see n. 29) thought that the statuettes were of goddesses and represented Hera, especially since so many terra-cotta cows or ox-like quadrupeds were found with them. But they are too crude and carelessly made to be goddesses, even though they give a gracious impression. The head is triangular and the face is a pinched-up beak. The eyes are represented by round pellets of clay added on the sides and a solid circle painted on the center for the pupils (in nos. 2 and 3). In the five other figurines there are no pellets and the eyes are indicated only by a small circle (either red or black). The heads in nos. 1 and 3 are nearly flat on top and have a long plastic braid down the back. Those with plastic eyes have a plastic braid. No. 5 with the cylindrical hat (painted black on the top inside as well as above the face) has a short plastic braid down the back. Around the neck is a band (painted in no. 10, but never in the crescent-shaped type) which may indicate a collar or band. The breasts are plastically rendered (in no. 3, placed rather high). The wavy, zigzag, or curving lines on the disk-shaped or elongated oval bodies, and the vertical bands on the cylindrical more slender stem (generally one at either side, one in front and one in back) are a short-hand suggestion of a bodice of pleated fabric indicated by wavy lines and a skirt which flares out at the bottom. In this first type, the stem is solid (2nd type, our no. 6 has a hollow cylinder) and more slender than in type 2, less skirt-like, often with a more spreading foot, the under-side concave, and the head generally uncovered (but perhaps not in no. 5). The emphasis is on the decoration of the body with a series of wavy lines, often running diagonally from right to left or left to right, but sometimes vertical, which really represent, as we have seen, the folds or pleats of a soft garment. The band around the body below the disk indicates a belt or sash. The more open decoration of the stem suggests a different more open garment, a bell-shaped skirt of heavier material. So these figurines probably wear two garments, a bodice of fine fabric and a skirt of heavy cloth. The statuettes vary in size from 0.049 m. to 0.123 m., in height and breadth of body from 0.017 m. to 0.049 m.; ours from 0.066 m. to 0.115 m. and 0.025 m. to 0.055 m. (no. 5 is the largest so far known).

Though the statuettes are conventionalized and crude, they stand solidly on their cylindrical bases, which, except in one case, are solid (though concave) and which swell out at the bottom. They are lively lovely ladies of leisure at Mycenae or Salamis, a general type but with characteristic Greek variety in the midst of symmetry. They are hardly goddesses as they are found without jewelry in the tombs and houses of the poorer people. As Max Mayer³³ long ago said, the variety of type precludes an interpretation as goddesses. As Nilsson has said, some might be symbolical representations of actual nurses to care for the children in the next world,³⁴ and the animals would be playthings, hardly to supply milk, as some have suggested. They may have been the cherished playthings of children (as also the chariots, of which many were found with them) who had died, but most of them have not been found in the graves of children.³⁵ I am inclined to agree with Nilsson, *op. cit.*, p. 264, that they were gifts to the dead, "Anyone who was unable to procure jewelry and costly things thought to make up for the want by these cheap figures, which however, it was imagined would procure a luxurious after-life for the child, woman, or man who had not known much but work and necessity in life." It is difficult to evolve a chronology or stylistic sequence. Those which are more naturalistic and less conventionalized and which have round bodies are earlier; and such as no. 6 with a hollow stem and those with longer oblong

³² *The Minoan-Mycenaean Religion and its Survival in Greek Religion*, pp. 260 ff.

³³ *JdI*, vii, 1892, p. 196.

³⁴ Cf. Furtwängler, *Aegina*, p. 373, pl. 108, 3, 4; 109, 4, with children.

³⁵ Cf. Blegen, *Prosymna*, i, pp. 256 ff.

bodies are later; but the different types seem to be contemporary and all Late Helladic III. They show a difference between the civilization in Crete, where they rarely occur, and on the mainland which had cruder conceptions of the next world than pictured on the so-called Ring of Nestor (if genuine) and on other Minoan works of art. These figurines, however crude, were the creations of artists who in the age of palaces fashioned them for the quick and the dead as humble tokens, possibly even as idols and playthings and adornments for the houses where some have been found, but especially as gifts to the dead to be placed in the grave, to comfort, amuse, and help the dead in the next world, as was the case with the Ushabtiu, placed in Egyptian tombs, as substitutes for the living.

Pl. VI, A, B, C—1. Ht. 0.109 m.; W. of disk 0.026 m.; greatest l. on top of 0.025 m.; W. on top 0.015 m.; diam. on bottom 0.023 m. by 0.026 m.; th. of cylinder 0.012 m.; l. of braid decorated with 13 horizontal bands 0.06 m.; ht. of cylinder 0.057 m.; from collar to sash 0.04 m. Disk chipped at middle right. Light buff clay. Bright red glaze. Solid red on top of head, on collar, sash, for nine wavy parallel lines on front, on six curving lines on either half of back. The edges of the beak and of the disk are also painted red and one vertical band on either side of the foot and in the center of the front and back.

Pl. VI, A, B, C—2. Very small figurine. Ht. 0.066 m.; W. of disk 0.024 m.; depth of head 0.01 m., W. 0.07 m.; depth of flaring base 0.014 m. Light buff clay. Brown to black glaze, solid on top of head, along nose, eyes, collar, nine wavy lines on front and back with an approximate circle of black along edge, sash, four vertical bands on cylinder, one at each side, and one in center of front and back. Flaring base. Breasts two round disks in very low relief.

Pl. VI, A, B, C—3. Ht. 0.101 m.; W. of disk 0.04 m.; diam. of head 0.018 m.; th. 0.01 m.; diam. of base 0.026 m. Braid on back with seven horizontal bands 0.045 m. long. Light buff clay. Red solid on top of head, for pupils and circles about eye-pellets, broad collar, five bands within red edges of disk curving to left and then back to right, two at the right forming uniquely long triangles, on back seven lines curving all to left; last two are triangular. Red for sash and one vertical band at back and on either side but two instead of one on front, connected by a slanting line.

Pl. VI, A, B, C—4. Ht. 0.086 m.; W. of disk 0.034 m.; concave top on hat 0.015 m. in diam.; diam. of base 0.02 m. Red for band with four dots above at top of head, edge of nose, two circular painted eyes, collar and sash, eight nearly vertical lines on disk, crossing slightly raised breasts; crossing lines or chiasitic pattern on front of cylinder,³⁶ broad band on back from top of head to sash, on back eight nearly vertical lines (two on left converging to form a triangle) with red oval. Lower part of back of cylindrical base plain.

Pl. VI, A, B, C—5. Ht. 0.115 m.; 0.057 m. width of disk which flares out more angularly than in most examples. Top of head 0.017 m. by 0.013 m.; diam. of base 0.032 m. Light buff clay, dark red on top, edge of nose, for circle around red eyes, broad collar, ten wavy vertical lines on oblong body on front crossing oblong breasts, eleven lines on back, seven diagonal or triangular lines to left, four vertical ones, on cylinder two broad bands widening toward flaring base, slightly concave.

Pl. VII, A, B, C—6. Ht. 0.11 m.; W. 0.05 m.; W. of hollow cylindrical hat 0.026 m.; depth of face 0.02 m.; diam. of hollow base 0.025 m.; ht. of cylinder 0.04 m. Light buff clay. Decoration in black. On inside of concave hat, crossing lines or a cross, solid line around inside edge and on outside six hanging loops or semi-circles. Below echinus-like hat at top of head, broad band with four hanging vertical lines on either side of face. Black circle for eyes,

³⁶ Cf. Blegen, *Prosymna*, ii, fig. 611, no. 2.

black down edge of nose and at back of head, around neck and waist, along top and sides of "wings," sixteen vertical bands on front and back. Broad vertical band in middle of flaring hollow cylinder, at either side and on front of middle. The hollow stem possibly indicates a later date than the solid stem. Those with the solid stem are taller and broader. Blegen, *Prosymna*, i, p. 358; ii, fig. 612, no. 2 also has a hollow stem reminiscent of a bell-shaped skirt and a saucer-like hat. Ours is the latest in the Salamis series.

Pl. VII, A, B, C-7. Ht. 0.116 m.; W. 0.043 m.; diam. of solid black concave hat 0.02 m.; greatest depth of face 0.025 m., diam. of base 0.025 m. Light buff clay. Decoration in black. Band at top of head, nose, solid circular eyes, mouth, collar, plastic braid at back (only 0.03 m. long), but not plastic eyes, sash, or belt, and high band above widely flaring base of plain cylinder. Eight wavy parallel vertical bands on front of body, nine on back.

Pl. VII, A, B, C-8. Ht. 0.113 m.; W. 0.058 m.; diam. of flaring concave hat 0.023 m.; flaring solid base 0.032 m. by 0.028 m. Light buff clay. Decoration black, around edge of top of hat, with two lines crossing near edge, small loops under top of hat, broad band at top of high head, narrow band above face. Black on nose, and for irregular solid eyes, around sides of face, for sash or belt, twelve vertical bands on body, one crossing each pellet breast, five diagonal vertical bands on either side of back, and an oblique line running to left from the first of the five at the right. On the middle of the back of the cylinder, a curving vertical band from the sash down and one at each side (only three instead of the usual four).

Pl. VII, A, B, C-9. Ht. 0.092 m.; W. 0.054 m.; diam. of head 0.022 m., of hollow hat, solid black inside, 0.015 m., of base 0.024 m. Greenish buff clay. Round plastic breasts. Black paint around top of head, lower edge of hat, solid eyes, nose, necklace with pendants, eleven vertical bands on front (paint worn off) and on back. Belt and broad band near base of cylinder which is plain.

Pl. VII, A, B, C-10. Ht. 0.111 m.; W. 0.043 m.; diam. of hollow hat (solid black) 0.015 m.; depth of head 0.018 m.; diam. of solid concave flaring base 0.024 m. Buff clay. Black paint. Solid circular eyes. Around disk-shaped body with protruding breasts, from top of head down both edges of the sides to band at bottom of cylinder. Seven bands or loops curve across the body in front over brown vertical bands, three extending to base. On the back is a broad painted band or braid from top of head to base, crossed by five or more semi-circular horizontal bands. Black around outer edge of concave bottom. Crude but unusual designs.

UNIVERSITY OF MISSISSIPPI
July 1949

A GREEK LADY FROM PERSEPOLIS

CLETA MARGARET OLMSTEAD

PLATES VIII-XII

THE Iranian Expedition of the Oriental Institute from the University of Chicago, under Director Erich Schmidt,¹ uncovered in its excavations at Persepolis a marble statue of a draped and seated female figure (pls. VIII, IX, X). The figure has been mutilated by the destruction of the arms, the head, and the feet. These are now lost except for the right hand, which was discovered in fragments (pl. XII, A). Thus the torso was all that remained of the original figure, and it was further reduced in size to the shape of a rectangular block when the thigh was broken off. Fortunately the smaller piece was found near the larger and both parts join together exactly (pl. XII, B).

The shining white marble of the statue, which has medium large crystals, is related to stone from the quarries of the Aegean islands.² Therefore it cannot be Persian but must be Greek. The workmanship, which produced a surface so polished that the crystals appear like inset brilliants, is comparable to statues such as the Nike found on Paros.³ Hence it cannot be Attic but must be East Greek. Typologically, the pose represents a woman seated upon a chair supported by a pillar with her bent arm propped upon her bent leg. Thus the new statue must be related to the well-known copies in Rome usually labeled the "Mourning Woman," or more specifically, "Penelope."⁴ Archaeologically, its discovery at Persepolis,

¹ This paper was first written for the American School of Classical Studies at Athens; was later presented before a meeting of the Middle West Branch of the American Oriental Society at Lexington, Ky.; and subsequently before the Annual Meeting of the Archaeological Institute of America at Hartford, Conn. Thanks are due to Professors Franklin P. Johnson of the University of Chicago, and Mary H. Swindler, Rhys Carpenter, the late Valentine Müller, and Dr. Mary Zelia Pease of Bryn Mawr College. Particular thanks are due to the Oriental Institute of the University of Chicago, to its Director John Wilson for permission to study the figure, and to Dr. Don McCown for the photograph taken on the spot, but most especially to the late Professor A. T. Olmstead and Dr. Erich Schmidt, at whose kind suggestion the publication of this statue was undertaken. Apologies must be made for the tardiness of this article, though the statue was easily identified as the original of the "Penelope" type when I saw it in the harem of Xerxes. But the many puzzles connected with its appearance have necessitated a long study.

² Accurate identification of marble is difficult; cf. the disagreements on the locales of the marbles of various copies.

³ *Einzelaufnahmen* 2395-8.

⁴ The type is discussed in general by Amelung, *ZfBK*, xiii (1902), p. 171, fig. 7; Anti, *Ann*, iv-v

(1921-2), pp. 87-95; *MonAnt*, xxvi (1920), pp. 611, 744, 747; Bieber, *DLZ* (1919), p. 432; Buschor, *FR*, 142, text iii, pp. 126 f.; Buschor-Hamann, *Die Skulpturen des Zeustempels zu Olympia* (1924), p. 38; Caskey, *Catalogue of Greek and Roman Sculpture in the Museum of Fine Arts, Boston* (1925), pp. 45, 47; Collignon, *Les statues funéraires dans l'art grec*, (1911), pp. 118-24; Graef, *AM*, xv (1890), pp. 17 f.; Joubin, *La Sculpture grecque entre les guerres médiques et l'époque de Phidias*, p. 200; Kjellberg, *Studien zu den attischen Reliefs* (1926), pp. 36f., 68; Lawrence, *Classical Sculpture*, p. 183; Léchat, *Phidias et la sculpture grecque au V^e siècle*, pp. 126, 135, 167-171, 173, 226; Lermann, *Altgriechische Plastik*, 1907, pp. 169 ff.; Lippold, *Kopien und Umbildungen* (1923), pp. 28, 119-122; *Griechische Porträtstatuen*, p. 42; Michon, *MonPiot*, xxxv (1935/6), pp. 115-117; Petersen, *RM*, vii (1892), pp. 72-75; Picard, *La Sculpture antique des origines à Phidias*, pp. 349, 352, n. 2, 365; Poulsen, V. H., "Der strenge Stil," *Acta Archaeologica*, viii, p. 106, Riis, *From the Collection of the Ny Carlsberg Glyptothek*, ii (1938), p. 150; Rizzo, *BullComm*, xxxiii (1905), p. 12; Rumpf, *Gnomon*, v (1929), p. 16; Schröder, *KuK*, xx (1922), p. 94; della Seta, *Il nudo nell'arte*, i, p. 606; Six, *JdI*, xxx (1915), pp. 77-81; Strong, *Strena Helbigiana*, p. 297; Studniczka, *JdI*, xxvi (1911), pp. 119-124, 170, 173, 179, 181, 183, 188 ff.; xxxiv (1919), p. 122, n. 3.

which was destroyed by Alexander and never rebuilt,⁵ is proof that it must antedate his reign. Consequently it cannot be a Roman copy but must be a Greek original. Stylistically, the drapery, which is rendered in soft pleats, is less formalized than that of the Olympia sculptures and less elaborated than that of the Parthenon sculptures. Therefore, since it cannot be of the fourth century, it could not have been removed from Greece by Alexander. Since it is of the mid-fifth century it could not have been booty captured in the destruction of Athens in 480.

There can be doubt, however, that the Persepolis Lady belonged to war spoils won by the Persians from the Greeks. The breaks under the pillar (pl. XII, B), on the ledge at the front corners, and between the legs of the figure and the pillar are rough, as though attacked by a blunt instrument. Because it was in this lower section that the statue was anchored to its base, this damage must have occurred when the figure was hacked out of its setting. Yet nothing of the chair or the pillar, or indeed any appropriate base upon which the statue could have been re-erected, was discovered at Persepolis. Therefore it would seem that this damage occurred before the statue came to Persia, which suggests that it was forcibly removed from its original home. Furthermore, it was found outside a complex of buildings now identified as a Treasury⁶ where such loot would have been stored. Whenever it was removed, certainly this statue was lost to the Greek world in the Achaemenid period. Other breaks which struck off the head, the arms, and the thighs (and possibly the feet) are smoother, apparently made by sharp blows. Inasmuch as fragments of the hand were excavated in a room of the Treasury, and since the thighs were discovered near the torso in the corridor, this second mutilation must have taken place at Persepolis. The occasion would have been the destruction of the site by Alexander's soldiers, testified archaeologically by his coins uncovered in the same building and recounted in great detail by literary sources which mention the enormous amount of booty carried away from Persepolis by him.⁷ Thus the statue was buried in Persia at the time of Alexander.

Since the date of the Persepolis Lady is obviously much later than the Persian occupation of the Greek mainland, the original locale from which it could have been taken by the Persians in a raid on Greek territory is historically limited to the region of Ionia. The East Greek coastal cities were freed from Persian domination in the battle of the Eurymedon (464) and by the middle of the fifth century, when the Persepolis statue was made, they were paying tribute to belong to the Athenian empire. At the outbreak of the Peloponnesian War the Persians retaliated and a raid on Colophon is recorded for 430. At this same time, late in the reign of Artaxerxes (died 424), the apadana at Susa burned and the Persian capital was returned to Persepolis, where a new building period was commenced. If this is the date of the removal of the statue from Ionia, its presence in the capital, which was almost unknown to the west, would be explained. Greek expeditions were dispatched and much of the territory was regained to rejoin the Attic tribute lists in the middle twenties.⁸ Since there exist both an original, lost to the Greek world in Achaemenid times and buried at the beginning of the Hellenistic period, and copies produced by the Romans of the first century A.D., the source for the later types should be sought in a second dedication. These Athenians who had recaptured Ionia from the Persians in the twenties had in 477 replaced the Tyrannicides taken by Xerxes with a second version which reproduced in general

⁵ Schmidt, "The Treasury of Persepolis," *OIC*, xxi (1939), p. 6.

⁶ *Idem.*, pp. 16 f.; 65 ff., fig. 47, 76 f.

⁷ *Ibid.*

⁸ Meritt, Wade-Gery, McGregor, *The Athenian Tribute Lists*, p. 316.

conception the original but added, in its details, the style of the contemporary art. This historical background must be considered, along with stylistic criticism, in order to suggest a solution for the disturbing puzzle of copies from an inaccessible original.

Though we do not possess her head or understand her significance, the Greek Lady from Persepolis is as much a prize to classical archaeologists today as she once was to her Persian captors, but for quite different reasons. For the Achaemenids she was visual proof of the valiance of Persian armies against Grecian lands, and as such plunder she was stored in their Treasury. For us she is an object of art, a valuable addition to our meager treasury of classical art preserved in the original, and a fascinating puzzle to investigate, since we already possessed copies made by the Romans over three hundred years after the original was safely buried. Whatever solution is suggested, and however acceptable it may or may not become, the superb quality of the workmanship, the rarity of Greek originals from the fifth century, and the unchallengeable authenticity of her pedigree assure her a prominent position in the history of Greek sculpture. Finally, the evidence for her Ionian origin is so conclusive that the statue becomes an important example of a definitely localized style of art.

The seated maiden is dressed in a thin chiton with large sleeves buttoned at the shoulders and arms and fitted at the elbows, a style common on Attic red-figured vases of the mid-fifth century.⁹ Of the himation which encircles the hips, covers the back and once veiled the head, three square corners are visible. The two on the back are at the left, above and on the right, below the surplus material folded back to uncover the chiton sleeves. The third corner can be discovered by tracing the selvedge on the right arm over the thigh to the front, where again the extra material is folded back. The fourth corner must be hidden under the right sleeve, for the sharp selvedge can be traced under the left arm and across the hips in undulating curves. The lower selvedge below the crossed thighs continued around the now broken legs to the back (still to be seen where the garment falls to its full length before the chair); it was hidden under the material which doubles over itself on the ledge, and it would not have been visible again (even in the original state of preservation) until it reappears hanging between the chair and the legs. Repeating this latter arrangement on the back are the curved drapery ridges on the front, whose broken beginnings are visible on the smaller block of the Persepolis statue.¹⁰

The arrangement of the drapery produces a distinguishable art form. Most prominent on the front is the central box-pleat placed obliquely from thigh to ledge, differentiated, by its two edges turned in opposite directions, from the other pleats, which are singly turned toward the waist. It separates the curved pleats around the hips from the diagonal pleats at the legs. The round outline of the chiton neckline is repeated below in curvilinear ridges, and these fill the inverted triangle whose sides are the deep pleats drawn from the buttons at the neckline to the waist. The other buttons at the shoulders gather the chiton into a series of smaller inverted triangles which contain semicircles and are themselves contained within larger triangles. On the back, the upper torso is outlined by the verticals of the himation which is folded from the bent head. The raised thigh is reiterated by the horizontal edge of the himation below the right sleeve. From a center hidden by this right angle, pleats radiate across the back, while from a visible point below on the ledge ridges radiate in the opposite direction toward the knee.

⁹ E.g., Richter and Hall, *Metropolitan Museum of Art, Red-Figured Athenian Vases*, no. 127, pl. 126.

¹⁰ The Roman copyist joined the folds of the hima-

tion over the legs by means of these drapery ridges to the pleats around the hips, and in his misunderstanding produced a skirt, not a cloak.

The characteristic style of this drapery is delicate, complex, and intricate, with details of a realistic irregularity and with a charm producible only by a sculptor's chisel expertly handled. The drapery is more naturalistic than the soft body beneath. The fullness of the breasts, the division at the waist, and the separation of the legs are well indicated, but the body itself served primarily as a form upon which the garments were draped. So realistic are the box-pleats of the himation across the hips that they can be duplicated exactly with a bolt of cloth, and so naturalistic are the curling edges of the bloused chiton that they closely resemble modern attempts at imitating famous statues.¹¹ Likewise the pleats radiating from the central point at the back of the right sleeve are actually so formed by the slack material remaining when the continuous edges were set at right angles. Also the taut folds on the side under the left arm are produced by the strain of the bias folds across the front. Finally, the only stiff and unnaturalistic folds are the accordion pleats at the ankles which would have been difficult to drape on a model. There can be no doubt that the knowledge of stuff illustrated on the Persepolis statue was obtained by the sculptor from handling and draping woven cloth. Such charming naturalism of drapery on this Ionic statue is fundamentally opposed to the typical naturalism of anatomical structure according to which the drapery is aligned in the art of mainland Greece. The contrast between these two styles results from the difference in the subject selected for realistic treatment. Inasmuch as on the Greek mainland contemporary sculptors apparently were employing posed models,¹² Ionic artists can also be assumed to have used models. But because of their interest in surface decoration rather than in structural clarity, which can be traced from the archaic period, they presumably used an immovable form instead of a posed figure, and upon this they draped and arranged the garment for study.

It is this drapery style which is so obviously different on the Greek original and the Roman copies (pl. xi). The two well known copies of the so-called "Penelope" type exhibit exact similarities in the pose of the figures, in the size of the statues,¹³ in the arrangement of the drapery, and in the artistic design. Hence there can be no doubt concerning the common source of inspiration for all three statues. But not only is the style of the drapery totally different; the proportion of the figure as well has been radically changed. Most obvious is the elongation of the super-imposed thigh on the Roman copies, exactly repeated in an Ajax on a Roman gem.¹⁴ Not only is this thigh abnormally long, but because it has become merely an extension of the horizontal himation at the waist, it appears to cut the figure into two longitudinal sections of almost equal size. Like the Ajax, the dimensions of the copies have been changed into a block with the breadth apparently the same as the height.

The copy labeled "Peneleope" in the Galleria delle Statue in the Vatican¹⁵ (pl. xi, A) has,

¹¹ E.g., Bieber, *Griechische Kleidung*, pl. xlv; the original was thought to be bronze by Six and Kjellberg, marble by Buschor.

¹² The physically balanced pose of Myron's Discobolos can be held by a trained dancer or athlete for an indefinite period of time, and in New York art schools models for the students have been so posed.

¹³ Torso in Persia: 0.85 m.; headless Chiaramonti relief: 0.87 m.; Galleria figure including incorrectly restored head: 1.15 m.

¹⁴ Lippold, *Gemmen und Kameen*, pl. xlii, no. 3, p. 174, dates it as Roman archaistic work although earlier it had been considered Transitional in style; cf. similar

contemporary gems: pl. xxii, no. 7; pl. xlix, no. 13; pl. li, no. 12; pl. lv, no. 12.

¹⁵ Helbig (Amelung) (1912), *Führer*, i, no. 189, p. 122; *BrBr*, 175; Amelung, *Die Sculpturen des Vaticanischen Museums* (1908), ii, p. 261, pp. 439 ff., pl. 47; *AD*, i, iii (1899), pl. 31A, pp. 17-19; Richter, *The Sculpture and Sculptors of the Greeks*, (1929), fig. 68; Alinari 6633; Anderson 5350; restorations: himation to shoulder, shoulder locks, upper part of breast; right hand, much of back of lower right arm, both feet and garment around them, chair to upper row which was recut into rocks; condition, heavily cleaned. The quality has been considered poor, but careful in details

over this elongated thigh, himation folds which have been necessarily pulled apart to cover this area, which is larger than on the Persepolis statue. The carving is superficial, so that the separation of the thighs is summarily indicated and the projection of the breasts is scarcely suggested, unlike the treatment on the Greek statue. Even the folds of the drapery, so complicated in the original, are here only shallowly differentiated. Thus the flat plane of the rough block is retained for the finished statue in an archaistic manner. The copy itself is apparently early imperial Roman in date, comparable to the copy of the Eirene by Kephisdotos in Munich. The same division of the figure into upper and lower sections by the elongated thigh and by the continuous horizontal line of the himation, the same superficial execution of the straightened drapery folds, and the same flatness of the disregarded body beneath are characteristics of the Chiaramonti relief, also in the Vatican¹⁶ (pl. XI, B). This second copy, like the first, has the same superficial quality which is usually dated before, not after, the middle of the fifth century. But technically it is finer, and the Chiaramonti copy differs from the Galleria copy exactly as the New York Eirene differs from the Munich Eirene. Probably, although it is usually labeled "Neo-Attic," it is Augustan in date.

Likewise the archaic form of the original block remains in the ovoidal shape of the two copies of the head. The fragmentary head in the Terme¹⁷ is similar to and restored from the well preserved head in Berlin¹⁸ (pl. XII, C). Because of the simplification of the details and the superficiality of the carving, one plane for the heavy chin is continued to become that of the plump cheeks. The one hollow of the eyes is doubly ridged, and the plane of the forehead, delineated below by the line of the eyebrows, is extended in both surface and outline to the bridge of the nose and beyond to its tip. The simplified plane of the hair has produced a smoothed surface like a cap, and the curls have been restricted into regular waves. The plane of the *sakkos* is smoothed and that of the veil is simplified. As a result, these reiterated horizontal lines emphasize the breadth of the face, and produce a type which seems to be Transitional rather than Classical in date. The Berlin head and the Vatican torso have been reconstructed together to produce the famous "Penelope" type by Studniczka¹⁹ (fig. 1).

Inasmuch as the Persepolis Lady was buried when the site was destroyed by Alexander, and the type still existed in the repertoire of the Roman copyists, two different originals must necessarily be presupposed in order to explain this relationship between the Persian

following the original by Amelung, and the best, since copyists often added later but not earlier stylistic details, by Lippold. The smoothed white surface of the marble and the lifelessness of the hard execution to be noted on the figure's right elbow, shoulder, waist, and on the lower half of the left arm and hand seem characteristic not of Roman but of early nineteenth century carving. This refinishing should be attributed to the restorer who must have worked previous to the first literary mention of the statue in 1804. Cf. Richter, *op. cit.*, fig. 659.

¹⁶ Helbig (Amelung), *op. cit.*, i, no. 89, p. 55; Amelung, *op. cit.*, i, no. 465, pp. 615 f., pl. 65, *AD*, i, iii, pl. 31b; Conze, *Die attischen Grabreliefs*, no. 471a, pl. cxi; Picard, *Manuel d'archéologie grecque* ii, *La Sculpture: période classique*, i, p. 52, fig. 25, Collignon, *op. cit.*, p. 119, fig. 61. The relief was once considered the original by Studniczka, then of very good Greek quality, by Amelung and Lermann, and finally Neo-Attic and thus contaminated with a later style, by

Lippold and Kjellberg. Cf. Richter, *op. cit.*, fig. 660.

¹⁷ Helbig (Amelung), *op. cit.*, ii, no. 1378, p. 162; ill. Collignon, *op. cit.*, p. 120, fig. 62. Restorations: both eyes, parts of forehead and cheeks, nose, chin, neck. The quality has been considered good and the execution Greek, by Amelung.

¹⁸ Blümel, *Katalog der Sammlung antiker Skulpturen*, iv, *Römische Kopien Griechischen Skulpturen* (1931), no. K165, p. 26, pl. 50 ill. Collignon, *op. cit.*, p. 121, fig. 63 f.; Joubin, *op. cit.*, p. 176, fig. 62; Picard, *op. cit.*, ii, i, p. 51, fig. 24; *JdI*, xxxi (1916), p. 253, fig. 11; *ZfBK*, xiii (1902), p. 171, fig. 7. Restorations: most of nose, piece of left eyebrow, small parts at both ends of left eye.

¹⁹ *AntDenk*, i, iii, figs. pp. 17 f.; ill. Lermann, *op. cit.*, p. 170, fig. 64; Joubin, *op. cit.*, facing p. 196, fig. 70; Winter, *KiB*, i, 8/9, pl. 236, no. 2; *FR*, iii, text, p. 126, fig. 58; *JdI*, xxvi, (1911), p. 122, fig. 47; xxx (1915), p. 79, fig. 5.

and the Roman statues. Are the copies from an original earlier than the Persepolis statue, as the superficial carving seems to indicate? Are the usual comparisons of the copies to the Olympia pedimental statues²⁰ close enough to prove an original which was older than the Persepolis statue? There are, however, striking differences in the drapery formulae. On the "Penelope" copies, the heavy himation has variable and interrupted pleats, whose folds begin and end without precise limits. These pleats contrast with those on the Olympia pediments, which are stiff and schematized, each ridge or depression being a continuation of its neighbor. The folds of the thin chiton are deep, irregular and soft on the "Penelope" copies,



FIG. 1. RECONSTRUCTION OF "PENELOPE" TYPE.

in contrast to the shallow, parallel and hard folds on the Olympia pediments. The Roman copies are thus, like the Persepolis original, further developed than the Olympia statues in the chiseling of the drapery. On the other hand, the conscious emphasis on the preliminary block of stone, which was preserved in the finished Roman copies, contrasts radically with the violent search for freedom from the block, which was exaggerated in the Olympia pediments. And it is exactly in this regard that the "Penelope" copies differ so fundamentally from the Persepolis original. The heads also have been compared with those on the Olympia gables and on the Boston "Throne." But again the "Penelope" copies offer shallow execution of complicated forms, while the Olympia pediments show deep cutting of simplified forms. The closest resemblance to the Berlin head, as has often been pointed out, is found in the Esquiline Venus,²¹ and this has recently been recognized conclusively as part of a Roman

²⁰ This comparison has been emphasized by Kjellberg, Collignon, Amelung, Petersen, Klein.

²¹ This similarity was pointed out by Blümel, Joubin, Buschor, Klein.

adaptation.²² Since, furthermore, the proportions resembled those of the Ajax on a Roman gem, it would seem probable that the Studniczka figure should be excluded from the category of accurate copies from originals of the Transitional Period in the fifth century. It would thus become an important example in the rapidly increasing collection of Roman adaptations which were reactions against the inherited Hellenistic proficiency and realism, adaptations which tried in vain to recapture the "good old days" of the "Strong Period."²³

Thus the mid-fifth century complications of the drapery, which in the copies contrast so sharply with the conscious simplification of the whole, need no longer cause confusion. If the second original from which the Roman statues were copied does not appear to have been earlier than the Persepolis Lady, could it have been later? Actually there is some proof for this conclusion in the form of two heretofore puzzling copies of the "Penelope" type.

The head in the Ny Carlsberg Glyptothek at Copenhagen²⁴ (pl. XII, D), formerly in the Giustiniani collection in Rome, has a charming new hairdress. Here the long finger curls around the face are in reality bangs, made from hair that was brought forward from the crown of the head and cut at the forehead. The curls are not confined into the waved outline of the Berlin head. Since the fashion is datable, this style of hairdress is another chronological criterion, which supports the date indicated by the comparison with the Parthenon and Olympia sculptures. Borrowed from youths, with whom it was popular for a long period, the fashion seems to have had only a passing vogue among maidens, since it appears on few white lekythoi, mostly contemporary and painted around the middle of the century.²⁵ The Copenhagen copy was made in the second century A.D., and was a good reproduction until, unfortunately, the restorer in the late eighteenth century redid the mantle at the neck into curls, in order to join it with a male Stephanos body to which it did not belong. On this Copenhagen head there are no longer characteristics which must be explained by the limitations of an undeveloped art or its imitation, as is the case with the Berlin head. Instead, the hair has been sharply chiseled from the face and separated, lock from lock, thereby producing a high forehead. The lines of the eyebrows at the bridge of the nose have been interrupted. The modeling of the profile has been extended to the region of the mouth and of the eyes, which have been set obliquely into the head and have had tearducts added. The lips have been parted, and the upper has been joined to the surface of the face while the lower has been joined to the surface of the chin. These are all fundamentally characteristics of a mid-fifth century head, such as the Omphalos Apollo.²⁶ Yet some details, such as the tiny features, the small chin, the lively locks, recall the prettiness of the later fifth century, and suggest a contamination from that period.

These later contaminations are more obvious in the third copy of the torso, a statuette in the Conservatori museum²⁷ (pl. XII, E), which differs in style and proportion both from the

²² Carpenter, *MAAR*, xviii (1941), pp. 30-35.

²³ These adaptations could easily have been made under the influence of Melian terracottas still existing in the Roman period. This would also explain the restriction of the curls around the face into waves.

²⁴ *AntDenk*, I, iii, pl. 32 E; EA. 4622-4. Restorations: tip of nose: destruction: edge of veiling himation. From the later photographs the face appears to have been reworked, particularly the outer corners of the eyes, and only the plane below the cheeks seems to preserve the original surface; this, however, was not remarked by the observant Poulsen in his text.

²⁵ The fashion reappears in the late fifth century, but then the bangs of hair are combed loosely rather than tightly curled.

²⁶ *BrBr*, 42.

²⁷ Helbig (Amelung), *op. cit.*, I, no. 979, p. 560; H. Stuart Jones, *Catalogue of Sculpture in Palazzo Conservatori*, pp. 217 ff.; ill. *AntDenk*, I, iii, pl. 31C (in the Capitoline at the time of this publication); *Bull Comm*, xvi (1888), pp. 204-208, pl. XI. This has been rejected as a variant or an "Umbildung" because of the later style by Lermann, Lippold, Collignon.

other Roman copies and from the Persepolis original. The figure is taller and thinner than the Persepolis Lady, not broader and heavier, as are the Galleria and Chiaramonti examples. The shoulders are narrow and straight, not broad and sloping, and there is no division of the figure into upper and lower sections. The two thighs are differentiated and the whole body is visible under the deeply cut drapery; as a matter of fact these characteristics are more developed on this statuette than in the Persepolis Lady herself. In short this is the style of the ripened classical period of the last quarter of the century, when such details as the shortened chiton sleeves were repeated on the red-figured vases. Finally the interrupted chisel technique and the casual drapery pleats on the statuette are post-Parthenon, and like all art of the Athenian empire of this date, they are so Atticized that they resemble the sculpture of the Erechtheion and the Hephaisteion.

If it is to be suggested, on the basis of the Conservatori statuette and the Copenhagen head, that not an earlier but a later version of the Persepolis statue was the Greek original from which the copies were taken, then the three Roman figures should resemble each other more closely than they resemble the Persian figure in features which cannot be attributed to the copyists. As a matter of fact, the thigh is long on the statuette as well as on the Vatican statues, but short on the Persepolis maiden. The leg is vertical on both the Chiaramonti and Conservatori examples, but diagonal on the Persian. The upper body is twisted and the breasts are therefore in three-quarter view on the three copies, unlike the frontal pose and the broad shoulders on the Persian example. The broad ledge of the copies has the attachment for the hand in the center, while the narrow ledge of the original has the hand at the back. These characteristics, which appear in all three copies, again belong to the late fifth century, when artists were preoccupied with figures which twist in space. The chiton at the neck is treated, in the copies, with a more emphasized cowl and pouch, while on the original there is a more exaggerated inverted triangle. The chiton sleeve on the right arm is cut off above the elbows on the Roman figures, but added as a cushion on the Greek figure. Again these details on the copies are Atticisms which did not become predominant in Ionia until the late fifth century. The chiton at the left arm is pushed aside under the breast and is hung over the himation on the three copies, precisely like the treatment used in the Caryatids of the Erechtheion, while its folds are a straightened ripple on the mid-fifth century Persepolis Lady. The himation is edged over the thigh with the same number of curves, in the same arrangement, on both the Galleria and the Conservatori examples; these are looser on the copies, but looser still on the original.²⁸ Stylistically, it seems possible to prove that the original from which the copies were made was later in date than the Persepolis statue;²⁹ and it would be a natural assumption that any statue carried off by the Persians would have been replaced as soon as possible.

²⁸ This fold is drawn by Studniczka as turned from right to left, but the *BrBr* and *AntDenk* photographs show that the sharp vertical line is merely the edge of the restoration, and the photograph Anderson 5350 shows clearly this recutting of the upper curve to conform with this backward folding. With a photograph of the Conservatori statuette in hand before the cast of the Galleria statue, it is not difficult to reconstruct the same arrangement on both.

²⁹ It is to be admitted that there are obvious variations within the three copies, but these are best explained as the natural differences between a Roman adaptation on a large scale and a late fifth century type

on a small scale. The objection that a statuette is unreliable is countered by the same evidence from the large Copenhagen head. Although the authority of the latter might be refuted by the waved hair on electrum coins struck by Lesbos and Phocaea together (Babylon, *Traité* (1916), pp. 1211, 1219, pls. CLIX, fig. 43, CLX, fig. 1: BMC, *Troas*, pl. XXXII, nos. 19 f., pp. 160 f.), these can be related better to the Melian types than to the Berlin head. Such contradictions could be otherwise explained by assuming three originals, closely related and dated to the sixties, forties, and twenties. Granted that all "types" in ancient art must be carefully investigated, allowing for their iconographical

The Persepolis Lady proves again how much of Greek style has been lost by the Roman copyists. Even if there were not the difficulty of the two Greek originals and the Roman adaptation, the classical and the neo-classical would still be different visual worlds. In our own age, when day laborers point off the finished sculpture from the academic artist's clay model,³⁰ we are too likely to accept the mechanics of the Roman system of pointing as valid. No matter how many points are selected, the area between the points is neglected, and the results are necessarily variables. Greek sculpture is an art of flowing surfaces, and these can never be mechanically reproduced. How fortunate, then we are to have added another example to our meager storehouse of Greek treasures. But there are other originals from the fifth century, primarily red-figured vases and terracottas, which help in understanding classical art. Some of these, such as the Melian terracottas, represent the same mourning female as the Persepolis Lady. A study of these several types is necessary for the reconstruction of the Persepolis statue.

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July 1949

similarities but separating them in date according to both copy and original, nevertheless, before such a theory could be advanced it is necessary to explain the production of the Persepolis figure when an earlier statue was in existence. There are only three possible suggestions. First, that they were made in different localities; but this is impossible because they are so close in style. Second, that the marble Persepolis figure reproduces a bronze statue, suggested by Six and Kjellberg; but in my opinion, Greek sculptors were too intent upon discovery to repeat themselves, unless forced to, and Roman artists, particularly of early

Imperial times, were too imbued with the grandeur of the "Strong Period" to make trustworthy copies. Third, that the new statue is only another grave relief; but its quality appears to be too fine for such a consideration.

³⁰ My acquaintance with Lorado Taft's studio when I was a student is still a vivid memory—how different the two objects looked, the original and the reproduction! I have also conducted a laboratory course in Modes and Methods of Painting, which has shown continuously how the copies reproduce the lines but lose the style.

BYZANTINE BRICK STAMPS

C. A. MANGO

THE systematic study of Byzantine brick stamps, and the first attempts to render their import intelligible, began with Déthier and Mordtmann in the early seventies of the last century. It must nevertheless be pointed out that two stamps from St. Sophia were published by Salzenberg in 1854, and a few specimens from Salonica by Texier and Pullan in 1864; while as far back as 1745/48, J. B. Germain transcribed eight of them from the rotunda of St. George. Better known is the somewhat pretentious article of Dorigny (1876), which sets out with little success to interpret and date representative inscriptions. Since that time hundreds of brick stamps, mainly from Constantinople, have been published; a list, which I believe is fairly complete, will be found at the end of this article. There are, however, a great many more unpublished stamps in private collections, while hardly a visit to the walls and other Byzantine ruins of Constantinople fails to reveal a few.

The reading of brick stamps raises many difficulties which I do not profess to be able to solve. The aim of this article is to give a bibliography, as some of the relevant material is not readily accessible, and to indicate the main problems of interpretation.

FORM

The inscriptions are always in raised letters, such few incised ones as there are being merely graffiti. As a rule, they run horizontally in a sunk oblong frame, forming one, two,



FIG. 1. FROM A RUBBING.

or three lines. Others are circular or cruciform. The execution is often slovenly, the letters unequal and straggling. Sometimes the whole inscription reads backwards, or else single letters are reversed or inverted. In the manufacture of the bricks, a stamp bearing the legend in reversed order, was pressed on the wet clay; it was usually cut in wood,¹ or in bronze.² A close parallel may be sought in the Byzantine seals preserved in many of the museums of Europe;³ their purpose is said to have been the stamping of household goods and of pastry, while others were worn as amulets.⁴

Some bricks were stamped with a geometrical design or just a cross. I illustrate two from the paving tiles of SS. Sergius and Bacchus (fig. 1), of which the first has been published.⁵

¹ Cf. *BCH*, vi (1882), p. 48, l. 172: τύπον ξύλινον κεραμίδων.

² A bronze stamp reading CTEΦΑΝΟΥ ΠΡΕΣΒΥΤ(ΕΡΟΥ)S has been published by Mowat in *Bull. de la société nationale des antiquaires de France*, 1891, pp. 137-138.

³ See Wulff, *Altchristliche und Mittelalterliche Byzantinische und Italienische Bildwerke*, 1909, i, p. 189 sq.

and pl. LI; Soteriou, 'Ὁδηγὸς τοῦ Βυζαντινοῦ Μουσείου, 1924, p. 64, n. 1; etc.

⁴ Lampakes in Δελτ. τῆς Ἱστορικῆς καὶ Ἐθνολογικῆς Ἐταιρείας τῆς Ἑλλάδος, i (1883), p. 515.

⁵ Van Millingen, *Byzantine Churches*, 1912, p. 79; Gottwald in *BZ*, xvii (1908), p. 484. Cf. the decorative rosettes from Nicopolis (Philadelphus in 'Αρχ. Ἐφ., 1916, p. 45; 1918, p. 41 and fig. 10).

In the inscriptions Greek is used almost exclusively, the few Latin ones that there are being invariably early.⁶ But just as single Roman letters appear on Byzantine coinage, they are to be found on brick stamps also (e.g. D, d, etc.). Ligatures and abbreviations are very common; misspellings are universal. The sign of abbreviation is S, 2 or ∞, which is also used to fill up empty spaces. A cross often stands at the beginning and at the end of the inscription. The lettering bears a close resemblance to that found on Byzantine coins and lead seals. I do not believe that a close examination of it will provide a means of dating, save perhaps in a few exceptional cases. The first stamp in fig. 2 has been found by me near the Silivri Gate; the second has been published;⁷ the third is from the Golden Gate. The square □, like the square □, points to the fifth or sixth century.⁸



FIG. 2.

The use of monograms is not uncommon, and provides endless difficulty in reading. They are of two kinds: those built round a cross, and those obtained by a fusion of letters (fig. 3). Wulzinger reproduces a brick stamp with three monograms side by side.⁹ Another device was to place the component letters round the arms of a cross.¹⁰

What has been said above applies to brick stamps from Constantinople. In appearance they resemble closely the Roman,¹¹ and the Greek,¹² although manifesting far less variety. The stamps from Salonica, however, form a class apart. They lack frames, and the legend is always very short, usually in the form of a monogram. The stamps from Thessaly and Bithynia are more like those from Constantinople.

⁶ Like the DDNN published by Déthier in K.E.Φ.Σ., iv (1871), p. 162, no. 3. Cf. Dorigny in *RA*, xxxii (1876), p. 84, no. 1. It is attributed to Valentinian and Valens. Cf. DDDHHHHH = ? *Dominorum nostrorum indictionis* (*Second Report on the Hippodrome Excavations*, 1928, p. 56, no. 48); DDHH = ? *Duum dominorum nostrorum*, and DDD = ? *Trium dominorum NNN nostrorum* (*CIL*, xv, pt. 1, nos. 1661, 1662). Cf. *BCH*, xxiv (1900), p. 549, where an inscription from Rumelia has DDDNNN for Constantine, Constantius and Constans.

⁷ *Second Report*, no. 29.

⁸ This form was current throughout the East in Roman times. In Byzantine epigraphy it more often

than not points to the sixth century. Cf. *Byzantion*, vi (1931), pl. 17; Grégoire, *Recueil des inscr. grecques chrétiennes de l'Asie Mineure*, 1922, nos. 125, 287; Dain, *Inscr. grecques du musée du Louvre*, 1933, p. 124; likewise the dedicatory inscription given by Mordtmann, *Esquisse topographique de Constantinople*, paragraph 97.

⁹ *Byzantinische Baudenkmalen*, 1925, p. 41, fig. 20.

¹⁰ *Second Report*, nos. 12, 30.

¹¹ As described in the introduction to *CIL*, xv, pt. 1; H. B. Walters, *History of Ancient Pottery*, 1905, ii, p. 352 sq., etc.

¹² Walters, *op. cit.*, i, p. 101 sq.; P. Paris, *Elatée*, 1892, pp. 110–118; Wace in *BSA*, xiii (1906/7), p. 17 sq., etc.

DATE

Byzantine brick stamps may be said to begin with the fourth century. It is quite possible that earlier (i.e. Roman) specimens may come to light in Constantinople, and Dethier already gave us one which he reads "Antoninia," the official name of Byzantium under Septimius Severus.¹³ I am not, however, fully convinced of his interpretation, as the reading 'Αντωνίου is equally likely. It is to the fifth and sixth centuries that most of our specimens belong. The monastery of Studius alone (A.D. 463) is said to have yielded over a hundred, but they have never been published.¹⁴ It is difficult to tell exactly when the practise of

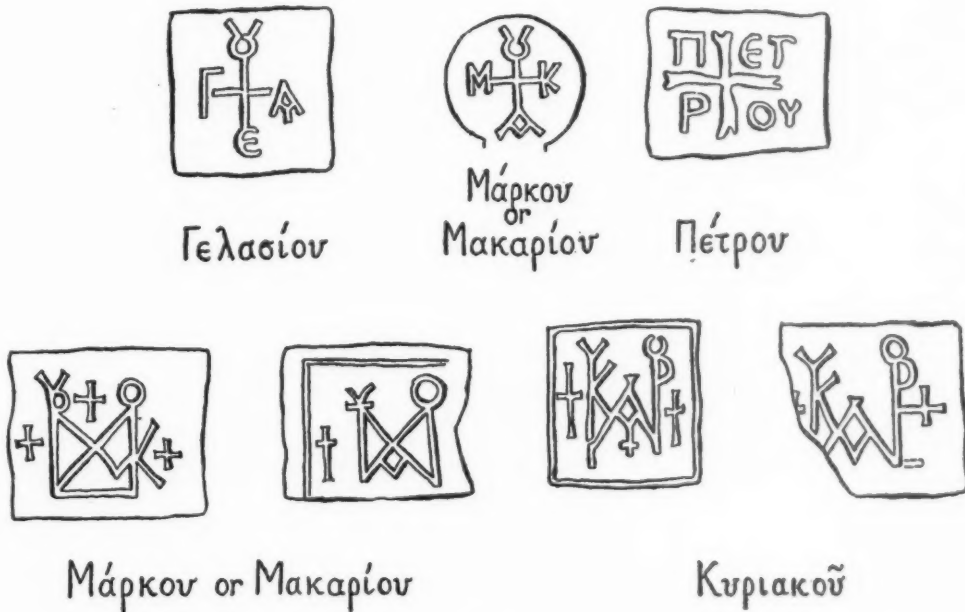


FIG. 3.

stamping bricks was abandoned by Byzantine kilns. The last Palaeologian buildings have not so far given us any examples; on the other hand, quite a few have come from tenth and eleventh century ruins. We shall have to discard as erroneous the attribution of certain stamps to Andronicus I and Andronicus II,¹⁵ and to the imperial candidate Peter of Courtenay,¹⁶ because BA can no longer be read as βασιλεύς. Gedeon found a brick stamped with a big ω in the walls of the Phanar which, he thinks, stands for the emblem of the Palaeologi.¹⁷ Dorigny, with his usual irresponsibility, ascribes all cruciform stamps to the Palaeologi, and one in particular he dates from the reign of John V or John VIII.¹⁸

¹³ *Der Bosphor und Constantinopel*, 1873, p. 18.

¹⁴ *Izvestija Russkago Archeolog. Instituta v Konstantinopolje*, xv (1911), p. 257.

¹⁵ Paluka in *Mitt. d. Deutsch. Exkursions-Klubs in Konst.*, ii (1895), p. 38.

¹⁶ Dorigny in *RA*, xxxii (1876), pp. 315-317, where

the date given for the brick is 1218/9. Peter never reigned in Constantinople.

¹⁷ *Ἐγγραφοὶ λίθοι καὶ κεράμια* in *Ἐκκλησιαστικὴ Ἀλήθεια*, ix, p. 381.

¹⁸ Dorigny in *RA*, xxxii, p. 87, no. 19.

GEOGRAPHICAL DISTRIBUTION

We have seen that the bulk of Byzantine brick stamps come from Constantinople. The environs of the capital, especially the Asiatic shore, have also proved very fruitful, but they were probably supplied by the same kilns. It is a puzzle to me why so few provincial stamps are known: Nicaea, in spite of the great number of Byzantine ruins within its precincts, has yielded only two.¹⁹ One specimen only has been found in the Justinianic basilica at Philippi (Direkler).²⁰ Inscribed tiles are extremely rare in the Byzantine remains of Anatolia, and quite unknown in Greece proper. At Salonica we find them in the walls, and the great churches of the fifth century such as St. Demetrius and St. Sophia.²¹

IMPORT OF THE INSCRIPTIONS

It should be admitted that we are still to a large extent ignorant of the way in which Byzantine brick stamps are to be restored and read; and there is a further problem as to the identity and function of the proper names that occur on them. Attempts have been made to classify the stamps according to their shape, but the futility of such a method is clear, and has been disproved by archaeological evidence.²² Among recent scholars, Schneider was the first to introduce the obvious classification according to the contents of the inscriptions.

It is first necessary to dwell on the abbreviations commonly found on brick stamps. INΔ followed by a numeral has from the first been rightly completed *ινδικτιῶνος*,²³ and refers to the indiction cycles of 15 years each. This is a most inconvenient form of dating as compared with the consular year sometimes inscribed on Roman tiles,²⁴ or the regnal year at Pergamon.²⁵ BA has long been taken to stand for *βασιλέως*; Schneider proposes *βασιλικού*, but does not specify his reasons.²⁶ An examination of a few stamps will show why *βασιλέως* is impossible. INΔΙΞΓΒΑ ΓΕΛΑCIOV cannot be read²⁷ 'Ινδ. ιγ' *βασιλέως Γελασίον*, as there was no such emperor, nor can INHBAANΘΙ²⁸ be 'Ινδ. η' *βασιλέως Ἀνθίμου*. Similarly with INBBANE (στορίον ?),²⁹ and many others. I cannot believe either that INHBAΞΔΙΟ³⁰ stands for 'Ινδ. η' *βασιλέως Διοκλητιανοῦ* as proposed by W. S. George,³¹ even if we follow Seck in placing the beginning of the indiction system in 297.³²

Let us examine a few other examples. INABAΦΩ has been confidently read 'Ινδ. α' *βασιλέως Φωκά*,³³ but in the reign of Phocas there was no 1st indiction. For the same reason we cannot complete

¹⁹ Schneider and Karnapp, *Die Stadtmauer von Iznik*, 1938, p. 53.

²⁰ Lemerle, *Philippes et la Macédoine Orientale*, 1945, p. 488, note 3.

²¹ Perhaps early 6th century. On its brick stamps see Kalligas in *Π.Α.Ε.*, 1936, p. 115. I have been unable to consult his monograph *Die Hagia Sophia von Thessalonike*, 1935.

²² Different-shaped stamps are often coeval. See *The Great Palace of the Byzantine Emperors*, 1947, p. 29.

²³ Déthier in *K.E.Φ.Σ.*, iv, p. 168.

²⁴ *CIL*, xv, pt. 1, nos. 1204, 1221.

²⁵ Fränkel, *Die Inschriften von Pergamon*, ii, 1895, no. 661 et seq. On Pergamene brick stamps see *Altertümer von Pergamon*, ix, p. 132 sq., and x, p. 40 sq.

²⁶ *Oriens Christianus*, xxxiv (1937), p. 263.

²⁷ *Ibid.*, no. 7; cf. Talbot Rice in *Byz.*, viii (1933), p. 172, no. 10.

²⁸ Meyer-Plath and Schneider, *Die Landmauer von Konstantinopel*, 1943, p. 148; cf. Schneider in *BZ*, xxxvi (1936), p. 84, where the stamp INΓΙΒΑΑΠΙ is given. The reading *βασιλέως* is equally impossible.

²⁹ Meyer-Plath and Schneider, *op. cit.*, p. 149, no. 6.

³⁰ Cf. INΙΔΒΑΔΙΟ^υ pictured in Demangel and Mamboury, *Le quartier des Manges*, 1939, fig. 33.

³¹ *The Church of St. Eirene*, 1912, p. 60.

³² So also Amundsen, *Ostraca Osloënsia*, 1933, p. 65, as against Kase who places it in 312 (*A Papyrus Roll in the Princeton Collection*, Baltimore, 1933, quoted by Piganiol, *L'Empire chrétien*, 1947, p. 338, no. 75).

³³ Macridy and Ebersolt in *BCH*, xlv (1922), p. 392.

INHBAPK³⁴ = 'Ινδ. η' βασιλέως 'Αρκαδίου,
 INZBAKVPIFI³⁵ = 'Ινδ. ζ' βασιλέως κυρίου Φιλίππικου,
 INBBAΓPA³⁶ = 'Ινδ. β' βασιλέως Γρατιανού

as no such indications coincide with the principate of these emperors. What seems to confirm the reading βασιλικού is the frequent occurrence of BA, B', of even RA in this sense on lead seals.³⁷ Further INEIBADOM might be resolved as 'Ινδ. ιε' βασιλικού δομεστικού,³⁸ and we also have the stamp +BACI

AIKOV = Βασιλικού Ἰνδ. ζ',³⁹
 +INΔZ

At the recent Byzantine congress at Brussels, Mr. Mamboury submitted a new interpretation of the abbreviation BA, viz. that it stands for βαρέσαντος. In support of this view he produced a number of brick stamps where the abbreviation appears successively as BA, BAP, BAPE and BAPEC. Such evidence compels assent, especially as it explains many legends that have hitherto defied decipherment, e.g. INΔBAPEIOANO⁴⁰ which can now be read 'Ινδ. δ' βαρέσαντος 'Ιωάννου (sic), or INZBAPEAO⁴¹ which may be rendered 'Ινδ. ζ' βαρέσαντος Λογγίνου. I have not been able to consult the full text of Mr. Mamboury's communication, and do not consequently know how he disposes of the linguistic difficulty that arises out of his theory. The verb βαρέω—ω with the meaning of "to strike," "to stamp" is entirely absent from our classical and Byzantine lexica,⁴² and seems to occur only in modern demotic,⁴³ whereas some of the stamps on which the abbreviation BA is found may go as far back as the sixth century, and possibly even further.

There still remains, however, the question whether BA was used in a single or in several senses. The stamp BAZWE,⁴⁴ for which even Schneider proposes βασιλίσσης Ζωής, does not seem to fit at all into Mr. Mamboury's new theory. Or should we in some cases read βασιλική, i.e. "imperial tile," a form which occurs at Panticapaeum (Kertch), and which corresponds to the Greek δημοσία?⁴⁵

Another important question is whether any of the known stamps can be confidently attributed to an emperor or not. The only instance that I am aware of is the newly-discovered 'Ιουστινιανού νικητοῦ, of which several excellent specimens have appeared in the course of Mr. Ramazanoğlu's excavations near St. Sophia. But this, as it has been already pointed out, may be a mere invocation or exclamation, and it does not in any way indicate an imperial donation. Possibly the stamp AEON(τος) which comes from Leo V's extension of the Land Walls at the Blachernae⁴⁶ is also imperial. It does not follow, of course, that imperial stamps

³⁴ Talbot Rice, *op. cit.*, no. 2.

³⁵ *Ibid.*, no. 6.

³⁶ Mamboury and Wiegand, *Die Kaiserpaläste von Konstantinopel*, 1934, p. 20; Wulzinger in *JDAI*, xxviii (1913), p. 386, fig. 10, no. 1.

³⁷ Schlumberger, *Sigillographie de l'empire byzantin*, 1884, pp. 42, 71. Laurent in *BZ*, xxxiii (1933), p. 331 sq., etc.

³⁸ Talbot Rice, *op. cit.*, no. 1.

³⁹ Déthier in *K.E.Φ.Σ.*, iv, no. 20. It is commented upon by Gedeon, *op. cit.*, p. 381.

⁴⁰ Leval in *K.E.Φ.Σ.*, suppl. to xviii, 1888, p. 616.

⁴¹ Demangel and Mamboury, *op. cit.*, fig. 60.

⁴² The nearest meaning in ancient literature is that of weighing or pressing down. Cf. Hero Mechanicus, *Automatopoietica*, οὐκὸν ἐὰν τῷ δακτύλῳ κάτω βαρήσωμεν

τὸ ὑσπλήγγιον, and Josephus, *Antiquitates Judaicae*, βαρύντες αἰεὶ καὶ βαπτίζοντες ὡς ἐν παιδιᾷ νηρόμενον, both given by Stephanus s.v. βαρέω. Βάρησις = a weighing down, a heaviness, occurs in Iambl. *Adhori.* 326 (quoted by Sophocles). Cf. *Cyrrilli*, *Philoxeni aliorumque veterum glossaria*, Paris, 1679, βαρῶ = gravo, premo, gravesco, βάρησις = pressus.

⁴³ See I. Lowndes, *A Modern Greek and English Lexicon*, Corfu, 1837, under βαρῶ explained as "to burden, to strike, to beat, e.g. ἐβαρέθη εἰς τὸ ποδᾶρι, etc." and so βάρεμα = blow, stroke, beating.

⁴⁴ Schneider in *Oriens Christianus*, xxxiv, no. 55.

⁴⁵ See Walters, *History of Ancient Pottery*, i, pp. 101-102.

⁴⁶ Meyer-Plath and Schneider, *op. cit.*, p. 150, no. 21.

were never in use in the Byzantine world, particularly in the early period. The names of Constantine⁴⁷ and Valentinian⁴⁸ occur on bricks found in Italy; Theodoric in the sixth century inscribed the roof tiles of St. Peter's with the words REG(nante) D(omi)N(o) THEODORICO FELIX ROMA.⁴⁹

Before proceeding to further discussion, it is necessary to give a rough classification of the brick stamps, according to their content. They fall into the following groups:—

a) Those consisting in a proper name in the genitive, e.g. +ΩΤΙΝΟΥ⁵⁰ ΝΙΚΗΦΟ(ρου);⁵¹ +ΔΗΜΗΤΡΙΟΥ;⁵² +ΜΑΜΑ;⁵³ ΤΡΟΦΙΜΩ,⁵⁴ etc. Also those with a Christian name and a surname, such as⁵⁵ +ΙΩΑΝΝΩ
ΚΟΛΟΚΥΝΘΩ

b) Stamps having a name followed by the rank, dignity or occupation of that person, e.g. ΘΕΟΔΩΤΩ;⁵⁶ +ΚΥΡΙΑ
ΔΗΠΟΤΑΤΩ;⁵⁷ ΚΥΠΣΒΣ = Κυριακοῦ πρεσβυτέρου;⁵⁷ CIMON = Ὁνησίμου μοναχοῦ,⁵⁸ etc.
MONV

c) Stamps bearing in addition to the above a date in indictions, e.g. ΙΝΔΖΠΕΤΡΟ = Ἰνδ. ζ' Πέτρου;⁵⁹ +ΤΡΥΦΩ = Τρύφωνος Ἰνδ. η';⁶⁰ +ΓΕΩΡ
ΙΝΔΣΗ = Γεωργίου Ἰνδ. ιβ',⁶¹ etc.

d) Stamps inscribed with the name of a building or a place, such as the well-known ΜΕΓΣ
ΕΚΚΛΣ = Μεγάλης ἐκκλησίας;⁶² or again ΕΚΚΛΣ
ΘΗΒΣ = Ἐκκλησίας Θηβῶν;⁶³ ΤΗC
ΝΕΑ = τῆς Νέας,⁶⁴ etc.

e) Stamps with a wish or an invocation, e.g. ΠΕΤΔΡΩΔΙΑ
ΕΥΤΟΙΧΙΑΝ = Πέτρου διὰ εὐτυχίαν;⁶⁵ ΚΥΡΕ
ΚΥΡΙΕΩ
= Κύριε;⁶⁶ ΗΕΙΦΗΔΙ = Κύριε βοήθει Φηδίμω Ἰνδ. ζ',⁶⁷ and others with Θεοῦ χάρις.⁶⁸ To this
ΜΟΙΝΔΩΖ

class must have belonged the bricks destined for the dome of St. Sophia, which are said to have been stamped with the words “ὁ θεὸς ἐν μέσῳ αὐτῆς, καὶ οὐ σαλευθήσεται, βοηθήσει αὐτῇ ὁ θεὸς τὸ πρὸς πρῶτῳ πρῶτῳ.”⁶⁹ I cannot but concur with Gedeon, who remarks that if this legend was inscribed at all, it must have been in a much abbreviated form.

To class a) belongs the commonest of all Byzantine brick marks, viz. +ΚΟC
ΤΑΝ which is subject to many variations, and may stand for Κωνσταντίνου, Κωνσταντίου, or Κώνσταντος. One thing is certain, that whoever the persons in question might have been, they were not

⁴⁷ Reproduced by Grisar, *History of Rome and the Popes during the Middle Ages*, i, p. 302, fig. 70.

⁴⁸ D.N.FL.VALENTINIANVS.AVG. See Nicolai, *Della basilica di San Paolo*, 1815, p. 264.

⁴⁹ Grisar, *op. cit.*, ii, p. 231, figs. 144–145.

⁵⁰ *Second Report*, no. 6.

⁵¹ *Ibid.*, no. 28.

⁵² Van Millingen, *Byzantine Churches*, p. 79; Meyer-Plath and Schneider, *op. cit.*, p. 149, no. 14.

⁵³ George, *The Church of St. Eirene*, pl. 16.

⁵⁴ Meyer-Plath and Schneider, *op. cit.*, p. 150.

⁵⁵ *Second Report*, no. 1.

⁵⁶ *Ibid.*, no. 18.

⁵⁷ Déthier in K.E.Φ.Σ., iv, no. 9; Meyer-Plath and Schneider, *op. cit.*, p. 150.

⁵⁸ Dorigny, *op. cit.*, no. 29.

⁵⁹ Demangel and Mamboury, *op. cit.*, fig. 60.

⁶⁰ *Second Report*, no. 17. Cf. the stamp ΤΡΥΦΩΝΟC from Tralleis (*Mittheilungen, Athen.*

Abt., xiv, 1889, p. 106).

⁶¹ Swift, *Hagia Sophia*, 1940, p. 50

⁶² Antoniadès, “Ἐκφρασις τῆς Ἀγίας Σοφίας i, fig. 11; Lethaby and Swainson, *The Church of Sancta Sophia*, 1894, p. 156 (where it is misread), etc.

⁶³ Giannopoulos in *BNJ*, i, p. 391, and in *BZ*, xxi, p. 165; Soteriou in Ἀρχ. Ἐφ., 1929, p. 5.

⁶⁴ Tsakalof and Meliopoulos in *BZ*, xxii, p. 456; Meliopoulos in K.E.Φ.Σ., xxix, p. 229.

⁶⁵ *Second Report*, no. 31.

⁶⁶ *Ibid.*, no. 39.

⁶⁷ Salzenberg, *Alt-Christliche Baudenkmale*, p. 64; Lethaby and Swainson, p. 156; cf. Schneider in *Or. Chr.*, xxxiv, no. 90.

⁶⁸ Paluka, *op. cit.*, fig. 3; Mamboury and Wiegand, *op. cit.*, p. 15; Laurent in *Echos d'Orient*, xxxv, p. 229; Demangel and Mamboury, *op. cit.*, fig. 16, etc.

⁶⁹ Preger, *Script. Origin. CPanarum*, i, p. 92; Pseudo-Codinus, p. 140 (Bonn ed.)

emperors.⁷⁰ This stamp is found in the Justinianic parts of St. Sophia; I have picked it up in the ruins of an eleventh or twelfth century church.⁷¹ The view has recently been put forward that it stands for Κωνσταντινούπολις and denotes the municipal brickyard.⁷² I find this unlikely in the absence of a single stamp bearing the full word or any trace of πόλις, out of many hundreds that have been examined; the legend⁷³ never goes beyond

+KONCTAN.
TINOV+

Besides, Constantine was a very common name, and the greater part of other brick stamps has a name in the genitive.

It may well be asked at this point who were the Constantines, Stephens, Johns and others whose names appear on brick stamps. Dorigny and Déthier had many ingenious theories: some they ascribed to emperors, others to patriarchs, prefects of the city, etc. A good example of such forced interpretations is INΓBAPE] which has been read 'Ινγλίνου Βαρέγγου, "the English Varangian"!⁷⁴ Or again the stamp



FIG. 4

= Μακαρίου?
Διομήδους, ἰνδικτιῶνος
ιε'.

was attributed to Basil I, because on his first arrival at Constantinople he slept the night on the doorstep of the church of St. Diomedes.⁷⁵ It was also believed that certain stamps denoted kilns attached to churches and monasteries, a view that has since been abandoned.⁷⁶ According to Gedeon⁷⁷ and Mamboury,⁷⁸ single names stand for the brickmakers, a very sensible opinion, but unfortunately unsupported by any evidence. Let us turn for a moment to classes b) and c), and consider legends like Κυριακοῦ πρεσβυτέρου, Μάγνου πρεσβυτέρου,⁷⁹ 'Ονησίμου μοναχοῦ, Λουκά διακόνου⁸⁰ 'Ιωάννου ναυκλήρου ἰνδ. ε'.⁸¹ I agree with Dorigny in believing that these were donors; I do not think that these monks, abbots and shipowners were overseers of kilns or tax-collectors who checked output.⁸² Invocatory stamps like Πέτρον διὰ εὐτυχίαν clearly indicate gifts of building material. Dorigny, however, went too far in asserting that all stamps are those of donors. Perhaps, as in classical times, they sometimes give the name

⁷⁰ This view is still, however, held by some.

⁷¹ Near Suadiye on the Asiatic shore. These ruins were completely destroyed a few years ago.

⁷² *The Great Palace of the Byzantine Emperors*, p. 29.

⁷³ Mamboury and Wiegand, *op. cit.*, p. 38; Schneider, *Die Grabung im Westhof der Sophienkirche*, p. 26, etc.

⁷⁴ Curtis, *Broken Bits of Byzantium*, pt. ii, fig. 59; Curtis and Aristarches in K.E.Φ.Σ. suppl. to xvi, p. 36, no. 146. It is but an incomplete version of INZBAPEAO given above.

⁷⁵ Curtis, *op. cit.*, pt. ii, fig. 80. Cf. Meyer-Plath and

Schneider, *op. cit.*, p. 150, no. 30.

⁷⁶ See Déthier in K.E.Φ.Σ., iv, p. 168.

⁷⁷ *Op. cit.*, p. 381.

⁷⁸ *Byzantion*, xi (1936), p. 172.

⁷⁹ Justinianic. Dorigny, *op. cit.*, nos. 27, 30.

⁸⁰ *Ibid.*, no. 22.

⁸¹ Meliopoulos in K.E.Φ.Σ., xxix, p. 230; Schneider, *Byzanz*, p. 96; cf. Gedeon, *op. cit.*, p. 382.

⁸² As against this view, however, I must quote an inscription from Egypt which runs μακάριος διάκονος κεραμεύς. See Lefebvre, *Recueil des inscriptions grecques-chrétiennes d'Egypte*, 1907, no. 395.

of the contractor who had the bricks made.⁸³ If we knew something about the organization of the brick industry at Constantinople, it would perhaps have been possible to put forward some hypothesis. Only about 1% of the bricks are stamped, which suggests some system of checking or counting. Another guess⁸⁴ is that the indications are connected with taxation, but then it is strange why all stamps are not so dated, since presumably every kiln alike was subject to the tax.

In class d) we have the legend τῆς Νέας, which according to Meliopoulos is the mark of the Nea church built by Basil I in the Great Palace, although the brick itself comes from Pendik on the Asiatic shore.⁸⁵ But this explanation is rendered unlikely by the stamps⁸⁶

+THCN
EACAN = τῆς νέας ἀποικίας and⁸⁷ +THCN
EACANΔ . The meaning of the last two is not clear to me.
PONIKOV

Very important is the exact dating of brick stamps. Up till recently the provenance of published specimens was seldom accurately recorded, nor the fact whether they were found *in situ* or simply lying about. At the present moment, however, we can confidently say

of a few that they are Justinianic,⁸⁸ and one in particular, which reads +MEΓS
EKKAS is of the
INΔSIA

year 532/3.⁸⁹ As a further example will serve the remarkable stamp with the circular legend +ΕΠΙΔΙΟΜΗΔΟΥΣΕΠΑΡΧΟΥ round a central monogram reading 'Ρώμης. The prefect Diomedes was a contemporary of Justin II.⁹⁰ It is through such datable specimens that the systematic study of Byzantine brick stamps should be approached. There is, above all, the need for a corpus embodying all those that have so far been published, and I understand that this work has been undertaken by Mr. Mamboury, a person highly qualified for the task.⁹¹ Perhaps one day this will lead to as detailed a knowledge of Byzantine brick stamps as we have of the Roman.

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pt. ii, figs. 59, 69, 80.

⁸⁹ *Ibid.*, note 1.

⁹⁰ Dorigny, *op. cit.*, no. 35; Mordtmann in K.E.Φ.Σ.,
suppl. to xiii, p. 23–24. Mordtmann believes that the
stamp A +ΔΙΟΜΗ belongs to the same Diomedes,

INΔSIE in which case it should be dated 566/7. But this is doubtful. Another one reading ΔΖΔΙΟΜΗΔΟ = 'Ινδ. ζ' Διομήδους is wrongly connected by Gedeon with the church of St. Diomedes (*op. cit.*, p. 381). Cf. Meyer-Plath and Schneider, *op. cit.*, p. 149, no. 15, and Curtis, *Broken Bits of Byzantium*, pt. ii, fig. 60 quoted above. On Diomedes see Grégoire in *BCH*, 1907, p. 323.

⁹¹ Cf. *JRS*, xxxvi (1946), p. 223.

⁸³ *Sardis*, vii, pt. 1, p. 165, no. 225, where further references are given.

⁸⁴ *The Great Palace of the Byzantine Emperors*, loc. cit. Gedeon, on the other hand, thinks that the indication denotes an imperial donation from the public treasury, and its absence the gift of a private citizen (*op. cit.*, p. 381).

⁸⁵ Tsakalof and Meliopoulos, *op. cit.*, p. 456.

⁸⁶ Mamboury and Wiegand, *Die Kaiserpaläste von Konstantinopel*, 1934, p. 20.

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ADDENDUM

Papadopoulos-Kerameus in K.E.Φ.Σ., Suppl. to xvii (1887), p. 73, gives a tile from Silivri bearing the complete word ΕΔΙΤΙΟΝΟC (= ἐνδικτιῶνος).

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HAGIA SOPHIA AND THE FIRST MINARET ERECTED AFTER THE CONQUEST OF CONSTANTINOPLE*

WILLIAM EMERSON AND ROBERT L. VAN NICE

PLATES XIII-XIV

EFFORTS to identify the first minaret raised after Constantinople fell to the Turks on May 29, 1453, have for good reason, although with inconclusive results, centered around Hagia Sophia. The unrivalled size and magnificence of Justinian's church caused it to be first among the Christian churches appropriated to Moslem ritual. Descriptions of the triumphal entry into the city of Sultan Mehmed II, the Conqueror, report that he rode directly to the church, claimed it for himself, and ordered an imam to ascend the pulpit and make the declaration of Moslem faith.¹ After removal of the ceremonial furniture, purification with—legends say—rose water, and insertion in the apse of a mihrab, or prayer niche directed toward Mecca, regular prayers were said there; but since the church embodied no tall and isolated feature suitable for the traditional Moslem call to prayer, it was necessary to add a minaret. The site of this minaret, which was the first external evidence of conversion from church to mosque, save, probably, for the replacement of a cross on the pinnacle of the dome by a Turkish crescent, has not been established. It is our intention to review the history of the four existing minarets; to indicate that the south turret of the two standing beside Hagia Sophia's west window (pl. XIII, A) was once heightened to serve as a minaret which was removed in the sixteenth century but is recorded in surviving drawings; and, finally, to show that this no longer extant minaret was in all likelihood the first erected after the Conquest of Constantinople.

I

The long accepted fact that the minarets, which rise to a height of approximately 60 m. near the four corners of Hagia Sophia,² were added by different sultans is emphasized by

* We wish to acknowledge our particular indebtedness to Dr. J. Kingsley Birge of Istanbul, Turkey, for bringing to our attention the Turkish documents upon which this article is based. Dr. Birge first mentioned them soon after the inception, in 1937, of investigations aimed at identifying the original sixth century form of Hagia Sophia's structure. Almost simultaneously the late George Flockton, who was then engaged in uncovering mosaics for the Byzantine Institute, pointed out the pertinent architectural evidence. As a result of this coincidence the solution of problems posed by the minarets was clearly indicated, but it was impossible at the outset of our structural study to assemble data relating to the later history of the building, and they had not been recorded when activities were interrupted in 1941. The resumption of work at Hagia Sophia in the spring of 1946 enabled us to assemble the architectural evidence. Dr. Birge has trans-

lated Turkish sources; Boris N. Ermoloff of the Library of the Byzantine Institute, in Paris, has provided bibliographical material; and Frederick Allen and Kirk Stetson of Robert College, Istanbul, have assisted during the recording of factual data. Prof. L. V. Thomas of Princeton University has read this article in manuscript and offered valuable suggestions incorporated herein.

¹ For descriptions of the taking of the church see: J. von Hammer-Purgstall, *Geschichte des osmanischen Reiches*, Pest, 1827-1835, i, p. 553 f.; C. Mijatovich, *History of the Emperors*, London, 1892, pp. 223 ff.; E. Pears, *The Destruction of the Greek Empire and the Story of the Capture of Constantinople by the Turks*, London, 1903, p. 372 f.; and G. Schlumberger, *Le siège, la prise et le sac de Constantinople par les turcs en 1453*, Paris, 1914, p. 348 f.

² For general descriptions of the building and its his-

differences in their materials and design. The southeast minaret, the only one of brick, is thought to have been erected by the Conqueror and has consequently come to be regarded as the first constructed in Constantinople, but available sources offer conflicting testimony as to which sultans were responsible for the slender stone minaret at the northeast corner and the pair of identical stone minarets at the west. Since identification of the south turret as the base of a minaret depends upon circumstances attending the construction of the western pair, and since the belief that the southeast minaret is the first to have been raised in the city has not been substantiated, it may be useful to examine the character and history of each.

The brick minaret (pl. xiv, c, at right) stands 7.50 m. east of the south corner of the building on a buttress engulfing a ramp originally designed to provide access to the south gallery.³ This buttress, rising some 21 m. to the roof of the gallery and containing 2000 cubic meters of masonry, is apparently solid except for the small circular stair ascending inside it to the minaret. The minaret proper begins on the roof of the buttress with a square base of limestone carrying a tapered transition to a sixteen-sided shaft of brick; the *şerefe*, or platform for the muezzin, is corbeled from the shaft in a simple curve; and above the platform rises a thinner shaft ornamented, just below the conical roof, with a frieze of festoons of Renaissance, rather than Turkish, design.

While popular tradition attributes this brick minaret to the Conqueror, who died in 1481, there is neither documentary proof for the tradition nor reason to doubt it.⁴ On the other hand, the belief that the present southeast minaret was the first erected after the capture of the city appears to have originated with colorful seventeenth century descriptions of the building.

Evliya Çelebi, who served as a muezzin at Hagia Sophia on *Kadîr Gecesi* (The Night of Power) in 1635, tells the following tale. While Mohammed II was residing at Adrianople (Edirne) there was an earthquake which . . .

made the northern side of Aya Sofiyah bend and threatened its ruin. The infidels were much alarmed; but Prince Mohammed, in a friendly manner, sent the old architect Ali Nejjar . . . to the Greek king in order to repair Aya Sofiyah. It was he who erected for the support of the building four strong buttresses, every one of which was like the great barrier of Yajuj (Gog). The architect, having made a staircase of two hundred steps in the buttress on the right side of Aya Sofiyah, among the shops of the turban-makers (*sarikchi*), the king asked for what purpose this stairway was intended? The architect answered "For going out upon the leads in case of need." When the work was completed the king bestowed rich presents on the architect, who returning to Edreneh, said to Sultan Mohammed, "I have secured the cupola of Aya Sofiyah, O emperor, by four mighty buttresses; to repair

tory see W. Salzenberg, *Altchristliche Baudenkmale von Constantinopel vom V bis XII Jahrhundert*, Berlin, 1854; W. R. Lethaby and H. Swainson, *Sancta Sophia, Constantinople: A Study of Byzantine Building*, London and New York, 1894; E. M. Antoniades, *Ἐκφρασις τῆς Ἁγίας Σοφίας*, Athens, 1907-1909; and E. H. Swift, *Hagia Sophia*, New York, 1940. Being concerned primarily with the Byzantine church, these works do not attempt to explore problems presented by the minarets.

³ The relationship of the minarets to the plan of the original building is most clearly shown by H. Prost, *Ste. Sophie*, pl. v, A, in *Monuments antiques relevés et restaurés par les architectes pensionnaires de l'Académie de France à Rome*, ed. by H. d'Espouy, *Supplément*

(Paris, 1923). Since our structural investigations were limited to the central area of the building, we did not examine the minarets in detail; our descriptions consequently mention only their external characteristics.

⁴ There are few references in Turkish sources to Hagia Sophia's minarets, and these occur for the most part in documents cited by von Hammer. He reports, *op. cit.*, ii, p. 73, that the Conqueror's mosque, Sultan Fatih, was begun in 1463, and, ii, p. 96, his new saray in 1467, but fails to mention this minaret. Huseyn Efendi ben Haci Ismail of Ayvanseray, *Hadikat ül Cevami*, Istanbul, 1873, p. 3 f., ascribes this minaret to the Conqueror without advancing documentary proof.

it depended on me, to conquer it depends on thee. I have also laid the foundations of a minareh for thee, where I offered up my prayers." On that very foundation, three years afterward, by the will of God, Sultan Mohammed built a most beautiful six-sided minareh.⁵

If we could accept Evliya's assurance, written some two hundred years after the event, that foundations for a minaret had been prepared before the fall of the city, our problem would be easily solved, but his statement deserves little credence. To the minaret on this unidentified foundation he ascribes six instead of the actual sixteen sides. Elsewhere in his description Hagia Sophia is credited with 360 gilt domes and 361 doors, 101 of which are called "large gates," and he mentions the tomb of "Ai Sof who caused Aya Sofiyah to be built." Aside from these amusing exaggerations the suggested situation is implausible, for it appears highly unlikely that a Byzantine emperor would have accepted assistance in restoring a Christian church, even if sent "in a friendly manner," when his empire had been reduced to little more than the city itself and was surrounded by Turks whose avowed aim was to subjugate it. Finally, no suggestion of such assistance has been found in Byzantine sources, and we are forced to concede with his translator that Evliya is an "indifferent" historian.

The supposition that the southeast minaret was the first erected after the Conquest seems to have originated with Grelot, a French adventurer, who, in the seventeenth century when the mosque was jealously withheld from close inspection by Christians, disguised himself as a Turk and at considerable personal risk gained access to the galleries of the mosque. On the basis of observations made there he prepared an illustrated description which says of the minarets:

... that on the South-side is the biggest and lowest of all the four that stand at the four Corners of *Sancta Sophia* as being built in hast, after that *Mahomet II.* had chang'd the Church into a *Mosquee* and was the first piece of Building which the *Turks* ever erected in Constantinople.⁶

As one of the earliest first-hand accounts of the mosque available to Western scholars, Grelot's description has been widely quoted; but while it is doubtful that this minaret was the first Turkish construction in the city, his observation about its height was correct in the seventeenth century. The minaret is higher today than at the time of its completion because the Fossati brothers, who, between May, 1847, and July, 1849, executed the most recent thorough restoration of the building, were instructed to make it conform to the others by increasing its height but not otherwise to alter its form.⁷ Thus the festoons of Renaissance design were probably added in the middle of the nineteenth century.

The northeast minaret (pl. XIII, A, in which only its tip shows at the left of the dome) stands on an independent foundation 10 m. east of the northeast corner of the building and beyond a ramp to the gallery, still in use, corresponding to the filled one over which the southeast minaret rises at the other corner. Of the four it is the slenderest and most delicately ornamented; its limestone shaft has sixteen flute-like divisions and the underside of

⁵ Evliya Çelebi, *Narrative of Travels in Europe, Asia and Africa in the Seventeenth Century*, translated by J. von Hammer-Purgstall, London, 1834, p. 57 f.

⁶ G. J. Grelot, *Relation nouvelle d'un voyage de Constantinople*, Paris, 1680. We quote the English translation, *A Late Voyage to Constantinople*, by J. Phillips, London, 1683, p. 98.

⁷ The prodigious works executed by the Fossati brothers are dismissed in a single page of preface in G.

Fossati, *Aya Sofia, Constantinople, as Recently Restored by Order of H. M. the Sultan Abdul Medjid*, London, 1852. More is told of operations concerned with the restoration in G. Fossati, *Rilevi storico-artistici sulla architettura bizantina*, Milan, 1890, but the heightening of a minaret is not mentioned. We learn of this alteration from S. D. Byzantios, *Ἡ Κωνσταντινούπολις*, Athens, 1851-1859, i, p. 508.

its platform is enriched with stalactite forms; but in contrast with these purely Turkish details it carries below its roof a series of festoons, like those on the southeast, each of which spans two vertical divisions and seems therefore to be applied to rather than an integral part of the structure. This handsome minaret has been ascribed both to Bayazid II,⁸ son of the Conqueror, who ruled from 1481 to 1512, and to Selim II,⁹ 1566 to 1574, who is known to have authorized erection of one of the two remaining minarets.

The western minarets (pl. XIII, A) are symmetrically located, sharply distinguished from the others by thicker shafts, and identical in detail. Their supports consist of masses of limestone essentially square in plan which fill former rooms at opposite ends of the exonarthex and, rising to the roof of the west gallery, comprise approximately 700 cubic meters of stonework; tapered bases at the level of the gallery roof form transitions to their shafts of twenty sides; platforms are corbeled in a simple curve; and in place of festoons, which can be seen in photographs taken a number of years after the Fossati restoration,¹⁰ there are today insets of turquoise glazed tile. The identical character of these minarets naturally leads one to conclude that they were built simultaneously, but for reasons demanding further examination they have been attributed both to Selim II and to his son and successor Murad III. They have been ascribed to Selim, known on account of his intemperate drinking as "Selim the Sot," because a firman, to be quoted later, which was issued by him, in 1573, authorizes, among other extensive repairs of Hagia Sophia,¹¹ the erection of a new minaret. Selim's death on December 12, 1574, after fifteen days of fever following a drunken fall in his bath, materially affected, however, the history of the western minarets. Von Hammer, in ascribing both to Murad, says on the authority of Turkish sources at his disposal that Selim "had to abandon to his successor the accomplishment of these works."¹²

The foregoing review indicates that of the four existing minarets the southeast was constructed first—though its claim lacks documentary proof—at an unknown date between 1453 and 1481; that the northeast was added either by Bayazid II sometime between 1481 and 1512, or more than fifty years later by Selim II; and that though erection of one of the western pair was begun on orders issued by Selim in 1573, both, on account of his sudden death in 1574, were completed during the reign of his son Murad III. At the same time, the belief that the southeast minaret was the first to appear in Constantinople is not only open to question from the standpoint of architectural tradition but is actually disproved by documentary evidence.

II

The present southeast minaret, if built as the earliest connected with Hagia Sophia, would have occupied an anomalous position. For reasons thus far unexplained, when a mosque has

⁸ Huseyn Efendi ben Hacı İsmail of Ayvansaray, *op. cit.*, p. 3 f., but no dated document is cited; von Hammer, *op. cit.*, ii, p. 370 f., lists various buildings erected during Bayazid's reign, but no minaret is included.

⁹ Evliya Çelebi, *op. cit.*, p. 57.

¹⁰ Festoons can be seen on the western minarets in photographs taken towards the end of the nineteenth century; see Swift, *op. cit.*, p. 218, pl. VII. They remained until as late as the winter of 1934-1935 when a storm carried away the conical roofs of the two eastern minarets and damaged leads on the western

pair. In a photograph taken after the storm by Mr. Alfred Sellars of Bebek, Istanbul, a copy of which he has kindly put at our disposal, the festoons are still in situ. Since there is no trace of them today, they must have been removed during repairs necessitated by the storm. Possibly the tile insets were brought to light by removal of the festoons, but from inspection of the biscuit underneath the blue glaze of a fragment found on the platform of the minaret, the tiles would appear to be of modern manufacture.

¹¹ See note 21 below.

¹² Von Hammer, *op. cit.*, iii, p. 616 f.

but a single minaret, this customarily stands to the right of the principal entrance at the south corner of the west façade, though in rare cases it is found directly over the entrance or at the north corner to the left of the central door.¹³ No mosque in Istanbul has a lone minaret at its east end away from the entrance, and while Hagia Sophia is the only former church to have received more than one, the single minaret added to all other converted Byzantine churches¹⁴ stands at their southwest corners. The two or more minarets attached to imperial mosques always occur at opposite ends of the entrance façade, and in no instance do two stand along the same side or one each at diagonal corners. Hence the placing of Hagia Sophia's initial minaret at the southeast corner of the building would have contradicted traditional arrangements.

A second reason for doubting that the existing minaret was the first employed at Hagia Sophia suggests itself upon consideration of practical problems inherent in its construction. The circular stair leading to the minaret is the only void in a buttress comprising 2000 cubic meters of masonry. Even if the sixth century ramp embedded in it had previously been filled during Byzantine efforts at buttressing the structure, a sizable amount of stone must have been added when the built-in stairway was carried up to the gallery roof. It is significant, too, that this immense mass of stone abuts the east corner of the south gallery where deformations suffered by the fabric of the building are most conspicuous.¹⁵ We may reasonably assume that the minaret was built simultaneously with the buttress, or at least with an addition to it, as part of larger efforts at consolidation; and to the time consumed in enlarging the buttress must also be added that required for the construction of the shaft itself.

The masonry of the shaft is composed of bricks varying in thickness from 0.04 to 0.05 m., and in length from 0.34 to 0.36 m., ten courses of which measure 0.82 m.¹⁶ The mortar joints are consequently almost as thick as the bricks themselves, and it is probable in view of this fact that the shaft had to be constructed by short stages in order to prevent the too rapid imposition of successive courses from crushing uncured mortar out of joints below. Such a deduction is based, of course, on modern experience, but the weakening effect of undue haste would have been obvious to the masons at the time, and awareness of it may have been part of the traditional knowledge of their craft. It therefore appears doubtful that the shaft alone could have been completed without an appreciable delay after the commencement of regular prayers a few days after the victory.

Another basis for questioning the claim of the minaret is suggested by the dates of Mehmed II's other works. His own mosque, Sultan Fatih, for example, was not begun until 1463, ten years after the fall of the city, and his new palace not until 1467.¹⁷ Thus a long period may have elapsed before he was able to turn his attention from military and political problems to the embellishment of the city and its buildings. While the absence of contemporary accounts makes it impossible to tell when the brick minaret was started, later documents indicate that two others may have been employed before and during its completion.

¹³ Halil Edhem, *Nos mosquées de Stamboul*, 1934. The minarets of all but four of the fifty-seven mosques described herein stand at the southwest corner; of the four, two occur over the central door and two at the north corner.

¹⁴ A. van Milligen, *Byzantine Churches in Constantinople*, London, 1912, and E. Mamboury, *Constantinople Tourist's Guide*, Constantinople, 1925.

¹⁵ For the alarming degree of structural deformation inside the east corner of the south gallery, see Swift,

op. cit., p. 256, pl. XLV, A.

¹⁶ This dimension for the spacing of ten courses is obtained by averaging measurements taken at four small slits which light the stairway and at a point slightly below the platform of the minaret. Such brickwork erected between known dates near the end of the fifteenth century deserves more detailed study than we were able to give it.

¹⁷ See note 4 above.

The existence of a wooden minaret is indicated by a firman issued by Selim II in April, 1573, in response to a written communication stating that various buttresses were in need of repairs. This order, addressed to the Administrator of Ayasofya and Master Architect Mehmed, one of the Imperial Architects, says in part:

You have reported . . . that the wooden minaret has gone to ruin and must be built of brick. Therefore I have commanded that the place which is to go up to the minaret be now built in proper fashion.¹⁸

The fact that this is the only known reference to a wooden minaret attached to Hagia Sophia suggests either that it was so insignificant in scale as to have been ignored or that the firman refers to another feature which had been, or still was being, used as a minaret. The first possibility may be ruled out by the unlikelihood that the Turks would have constructed their first visible assertion of authority over so impressive a building within the limitations of material as impermanent as wood. At the time of the Conquest, on the other hand, a bell-tower was standing over the main entrance,¹⁹ reasonably close to the traditional location for a minaret. This bell-tower may have been built of wood, for excavations conducted in the atrium by Schneider failed to reveal foundations capable of supporting a masonry tower.²⁰ Since timbers of a tower built before 1453 probably would have needed substantial replacements when the firman was issued a hundred and twenty years later, we are inclined to agree with Schneider's association of the wooden minaret with the bell-tower. In any case it is now clear that another minaret was standing at the time of the firmans on the south turret.

The existence of another minaret is substantiated in a second firman issued by Selim, only three months later than the first, on June 22, 1573. This also was given in response to information about the condition of Hagia Sophia which had been communicated to the sultan. Addressed to the Kadi of Istanbul and the Administrator of Ayasofya, it describes at length how persons dwelling within the mosque property had pulled down old buildings, put up others, appropriated spaces within the buttresses as dwellings for themselves, cut hearths, cupboards, windows and passages from the buttresses, and dug and sold stones from their foundations. Among steps taken to rectify this situation which, it was agreed, threatened the ruin of the mosque, was included the removal of a minaret and its replacement by another. Stipulations of the firman are in part as follows:

. . . and whereas it has been communicated [to me] that certain places of the Imperial Mosque of Ayasofya, which is in front of my Royal Palace, are in need of repair:

In order for an inspection to be made, a journey to the aforesaid mosque was undertaken by myself, in felicity and fortune.

Sinan, the Chief of my Imperial Architects—model of the most glorious and most noble, may his glory endure—and the men who know the building thoroughly assembled together.

They reported, estimated, indicated and determined that the following is necessary:

that there be 35 *arshân* space vacant on the right and left sides of the mosque;
that 3 *zira* passageway be left on the sides of the medrese;

¹⁸ This translation is made from the firman as published in Old Turkish by Ahmed Refik, *Onuncu Asîr-i Hîrîde İstanbul Hayatı*, Istanbul, 1333 (1917), p. 32 f.; the firman is given in New Turkish in the second edition of the same entitled *On Altıncı Asîrda İstanbul Hayatı*, Istanbul, 1935, p. 21; it appears in French

translation in *Échos d'Orient*, xxviii, 1929, 156, p. 404.

¹⁹ The bell-tower is shown by Grelot, *op. cit.*, p. 104; its history is discussed by Swift, *op. cit.*, pp. 85 ff.

²⁰ A. M. Schneider, *Die Grabung im Westhof der Sophienkirche zu Istanbul*, Berlin, 1941, pp. 33 ff.

that the state storehouse be pulled down and done away with;
 that the minaret on the halfdome be done away with;
 that the minaret be built on top of the buttress in front of it;
 that buttresses and water conduits be built in the 35 arshûn space which is to stay empty around it [the mosque];
 that the places of the aforesaid mosque—inside it and outside it—which need repair are to be restored and cleaned out; . . .²¹

After stipulating indemnities and punishment for the "squatters," the firman, in summing up, again states:

. . . and to do away with its minaret which is on its halfdome;
 and to have built a minaret on the buttress which is in front of it; . . .

That a minaret could have been supported by the thin shell of a semidome is, of course, impossible, but the removal order proves that one was then standing somewhere on the higher roofs of the mosque. It is clear, too, that the removal of one minaret and the erection of another were minor activities compared with demolition and repairs affecting the interior and exterior of a vast building.²² The spaces 35 arshûns wide on the north and south of the mosque, for example, amounted to two strips 25 m. wide and more than 100 m. long. Sinan was charged with the supervision of operations comparable in magnitude to those performed in a period of twenty-seven months by the Fossati brothers two hundred and seventy-four years later. Though this document is the authority upon which the two western minarets have been ascribed both to Selim and to his son Murad, it is important to note that the firman specifically calls for the construction of a single minaret. It might be objected that the wooden minaret mentioned in the first firman was to be removed, but internal evidence conclusively shows that the minaret of the second firman was built of masonry on the south turret.

III

Circular stairs ending in each turret rise within extensions above the gallery roof of the piers which carry the western semidome (fig. 1).²³ These stairways are reached from the

²¹ The firman is found in Ahmed Refik, *op. cit.*, pp. 35 ff.; in the second edition of 1935, pp. 22 ff.; in his *Türk Mimarları*, Istanbul, 1937, pp. 91 ff.; and in German translation in *Deutsche Übersetzungen türkischer Urkunden*, Orientalische Seminar zu Kiel, 1920, 5, pp. 5 ff. In brackets at the end of each of these versions is the note: "Given to the Administrator on the 21st of Safer (June), 981 (1573)." The motive prompting this restoration of the mosque is explained by Byzantios, *op. cit.*, p. 512, as Selim's desire to alleviate by pious works his dejection brought on by the loss of Turkish naval prestige at the Battle of Lepanto in 1571; on the other hand, D. Kantemir, *Geschichte des osmanischen Reichs*, Hamburg, 1745, p. 341, attributes the restoration to Selim's wish to express his gratitude for recovery of the lost prestige in the following year. Prof. Thomas sees no justification for connecting the restoration with the external situation of the empire. The condition of the mosque, as described in the fir-

man, was such as to demand extensive repairs; these had been authorized three months earlier by the first firman; but their execution may have been hindered by "squatters" on the mosque property; when this situation was brought to Selim's attention, he gave the Kadi authority to evict the squatters, and Sinan full power to proceed with whatever repairs he considered necessary.

²² The magnitude of Turkish efforts to consolidate the structure of Hagia Sophia is at present not fully appreciated. We have intimated that the southeast minaret formed part of larger efforts at solidification; the scale of Sinan's activities is implicit in the firman of 1573 and the scope of the Fossati restoration is somewhat better known. In a later publication we hope more fully to define the extent of Turkish contributions to the stability of the building.

²³ The turrets are shown in section, with the errors and omissions inherent in conventional drawings, by

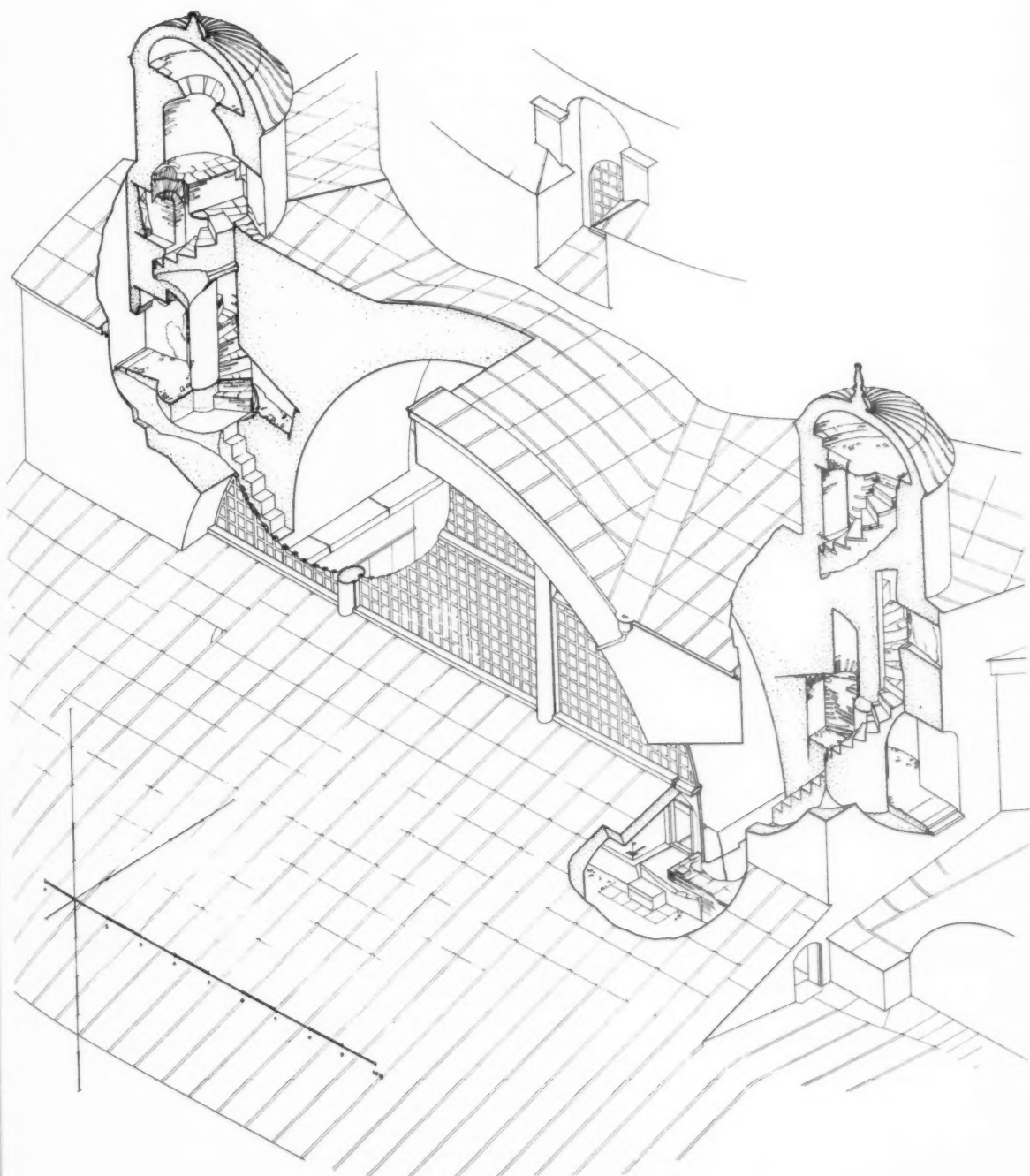
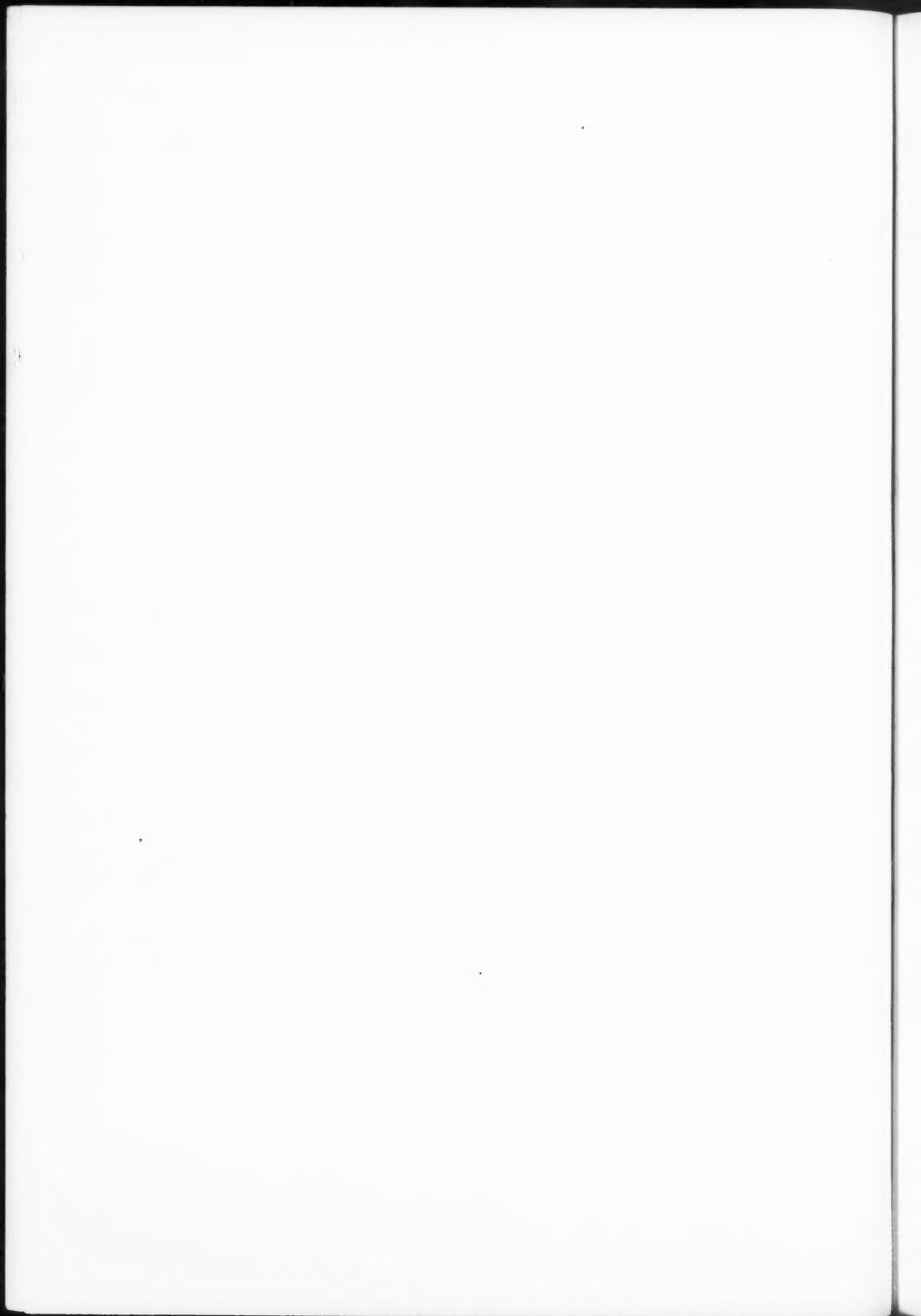


FIG. 1



outer side of either pier by an arched entrance-way 1.15 m. wide, 2.25 high and 0.93 long, the marble sill of which is 0.75 m. above the surrounding roofs. The space of the stairwells, 2.10 m. in diameter, is reduced by a central newel with a diameter of 0.62 m., and the spiral stairs, rising counter-clockwise in both cases, vary in width from 0.62 to 0.80 m. Opposite the entrance-ways are other passages of similar width, with sloping vaults, which originally descended to the upper cornice of the nave but are now blocked. Crumbs of stucco, fragments of brick, and such debris now fill these spaces level with their entrance sills. Since both stairs spiral upward in the same counterclockwise direction, they are not symmetrical with regard to the longitudinal axis of the building, but their details are otherwise essentially alike.

Each stair begins on a mass of solid brickwork and reaches, at half-spiral, directly over the entrance, a narrow, tapered opening to daylight; the second half-spiral is carried on a brick vault which rises in a flat curve from the newel to the enclosing wall (pl. XIII, B); after a full spiral the stairways emerge from the thick masonry of the piers into the thin circular walls of the turrets. Striking differences begin to appear at this level.

The north stairway attains with the sixteenth step a finished landing within the circular space of the turret. An arched exit to the roof of the barrel vault over the west window opens toward, but not on the axis of, the south turret; a narrow slit, which formerly opened to daylight, but is now blocked, also lies at an odd angle to the building's major axis; the space above the landing is covered by an inner vault of low curvature, with its crown missing (pl. XIII, C), and by an outer, thinner cupola with a three-centered curve.²⁴

The stairs of the south turret, in contrast, reach at the nineteenth step a former exit to the roof which is now solidly filled; there is no landing at the sill of this former opening because the steps continue on higher to a broken end at the twenty-eighth, level with the spring of the single thin cupola which roofs the turret. The continuation of these steps beyond any possible exit makes it certain that the original turret has been heightened at an unknown date.

Clearly the stairways and their enclosing masses belong to the initial period of Hagia Sophia's construction. The latter support the western semidome, weight the haunches of the barrel vault over the west window and assume part of the radial thrusts exerted by semidomes of the adjoining exedrae. The spiral stairs afforded access to roofs of the nearby semidomes, and the descending straight flights provided the only original means of reaching the upper cornice of the nave, which is approached today through a modern wooden doorway set in an irregular hole broken from the southernmost of twelve carved marble panels beneath the west window (fig. 1). In order to perform these indispensable structural and

Salzenberg, *op. cit.*, pl. XI; they are described in considerable detail by Antoniades, *op. cit.*, iii, pp. 7 ff., who offers a plan and section, figs. 554 and 555, only of the less critical north one; Swift, *op. cit.*, p. 138 f., follows Antoniades' description without mentioning the extra stairs in the south turret. For the translation of Antoniades' account of the turrets we are indebted to George Cotzias, M.D.

²⁴ Antoniades, *op. cit.*, iii, pp. 8 ff., attributes the low curvature of the inner vault to the efforts of sixth century architects to avoid building domes with steep curves which might endanger workmen repairing their lead coverings; he also suggests that the outer cupola,

which he calls hemispherical, was added as later reinforcement against excessive lateral thrust in time of earthquake. Because the span of the outer cupola measures 2.95 m. and its rise only 1.12 m., its curve is actually three-centered; lateral thrusts generated by the inner vault would appear to have a negligible effect upon the continuous supporting wall equal in thickness to almost half the span of the vault itself; and in any case the addition of a second cupola with lateral thrusts of its own would in principle increase, rather than counteract, whatever forces are exerted by the inner vault.

practical functions the stairs and their surrounding masses had to be carried to their present height during the initial period of construction.

The brickwork of the stairwells is naturally consistent in general characteristics with that of the earliest fabric. Individual bricks range in thickness from 0.04 to 0.06 m. and in length from 0.36 to 0.38 m., and ten courses pointed with a slightly concave joint measure 1.01 m.²⁵ In order to create a circular rather than polygonal well for the stairs, however, the edges of these typical bricks were chipped during construction to a shallow curve. Also, a few bricks measuring as much as 0.60 m. long are found in sidewalls of the descending passages where the latter penetrate the voussoir ring of the barrel vault over the west window. The presence of such large bricks is further proof that the masonry is original, for throughout the structure they are found chiefly in its major arches; and, having mineralogical components foreign to those of the smaller, typical bricks, they appear to have been imported to Constantinople specifically for use in Hagia Sophia's larger arches.²⁶ Thus all working masonry belongs to the earliest period, yet the striking differences between it and the brickwork of patently later alterations have not hitherto been remarked.

The north turret has neither been injured nor fundamentally altered since its construction, save for the filling of former openings with uneven brickwork. Its entrance arch is reduced to a rectangular opening by bricks carried on a wooden lintel; the passage to the cornice is blocked by an uneven filling now largely obscured by debris; both the original lighting slit at half-spiral and that in the turret are roughly filled; none of these later fillings affects the fabric. The steps, also, have not been altered in any way. While the front edge of the landing consists of a block of marble, the treads of all other steps are formed of typical sixth century bricks, or pieces of them, unbonded to the enclosing walls, and they show a very moderate amount of wear. Finally, the wall of the turret contains no cracks or other evidence of injury and no interruption of the continuity of brickwork at the springing of the inner vault. The thinner external cupola springs from a stone cornice, with a sloping profile of slight projection, resting on the extrados of the inner vault; it is covered with sheets of lead and crowned by a marble pinnacle, now broken. Though the rough brickwork filling former openings presents no identifiable characteristics, it is obvious that the north turret has suffered no structural injuries and only superficial alterations, and that its steps have been subjected to little wear.

The south turret, on the other hand, has been altered more radically. Its former passage to the inner cornice and its exit to the roof are blocked with regular brickwork in which the thickness of bricks varies from 0.03 to 0.035 m., the length is uniformly 0.285 m., and ten courses measure 0.65 m. These dimensions at once identify the filling as Turkish.²⁷ In contrast with the lightly worn brick steps of the north stair we find here that the first nineteen treads are slabs of marble²⁸ laid over brick risers and unbonded either to the newel or the surrounding wall; some are formed of two separate pieces of marble and others are missing; but all are deeply worn. From the twentieth through the twenty-seventh step the marble

²⁵ For a more complete discussion of sixth century brickwork see William Emerson and R. L. Van Nice, "Hagia Sophia, Istanbul: Preliminary Report of a Recent Examination of the Structure," *AJA*, xlvii, 1943, pp. 403 ff.

²⁶ *Ibid.*, p. 422, n. 34.

²⁷ Cf. W. S. George, *The Church of St. Eirene at Constantinople*, Oxford, 1913, p. 57; and Emerson and Van Nice, *op. cit.*, p. 422.

²⁸ Antoniadès, *op. cit.*, iii, p. 8, cites these marble treads as one proof of his amusing and implausible theory that the original builders of Hagia Sophia "sighted" the north side of the building and spent all their care on the south; for another of his arguments in support of the theory, based on his failure to distinguish Turkish from Byzantine brickwork, see Emerson and Van Nice, *op. cit.*, p. 422, n. 35.

treads, tooled in a manner unmistakably Turkish,²⁹ are bonded into the newel (fig. 1); and the stairs which formerly continued beyond their present broken end were constructed of blocks of marble carrying Byzantine ornament on their soffits (pl. XIII, D) and built into both the newel and the outer wall. Finally, the shell of the single cupola, crowned by a marble pinnacle, is constructed of Turkish bricks.³⁰

The conclusion to be drawn from these conditions—that the turret was heightened by the Turks to serve as a minaret—is implicit simply in the unequal amount of wear undergone by the stairways. Original brick treads of the north show moderate wear resulting, probably, from infrequent traffic through centuries of repairmen caring for the roofs. Marble treads of the south, laid over original treads of brick, are rounded and worn from continuous usage throughout an extended period of time. After the minaret had been removed, the remaining stump of sixth century construction was capped with the present cupola. Thus every tangible and intangible factor points to the south turret as the site of the minaret removed in accordance with Selim II's firman of 1573.

Convincing reasons can be put forward to support the opinion that this no longer extant minaret was actually the first to have been erected in Constantinople after the Conquest. Standing above and to the right of Hagia Sophia's main entrance, it was close to the location traditional for a minaret and suitably elevated for the call to prayer; it contained a circular stair of appropriate scale that could easily be extended; and it stood on a structural element capable of carrying a concentrated load. It was, in effect, the ready-made base for a minaret, and the saving of time to be gained by exploiting these advantages must have been immediately perceived by the architects whom Mehmed the Conqueror entrusted with the conversion of the church. But there remains a valid question. If a minaret stood here for nearly a hundred and twenty years between the Conquest and its removal in the sixteenth century, was its presence never recorded?

IV

During the sixteenth century when the domain of Turkish authority extended northward almost to Vienna, embassies were maintained in Constantinople by Central European rulers who found their frontiers menaced by Turkish armies, and the presence of these legations opened the way for an increasing number of travelers, an occasional one of whom was an artist intent upon satisfying the curiosity of the West concerning the legendary antiquities of the city. Surviving drawings by two artists of the sixteenth century record a minaret on the south turret.

Hagia Sophia is shown with two minarets (pl. XIV, A) in a panorama of Constantinople drawn in 1559 by Melchior Lorichs aus Flensburg,³¹ who accompanied de Busbecq's diplomatic mission reaching Constantinople at the beginning of 1556. This dated drawing was made seven years before Selim II came to power and fourteen years prior to issuance of his firman of 1573 calling for removal of a minaret. The artist's point of view is near Arab

²⁹ Turkish marble work in the building is in most cases distinguishable from Byzantine by two traits: blocks dressed by the Turks have a smooth but unpolished border about 0.015 m. wide, while their faces show marks of a comb-like tool with at least five points spaced less than 0.005 m. apart. Marble sills of the entrance passages to both turrets also have these characteristic Turkish textures.

³⁰ Antoniadès, *op. cit.*, iii, p. 9, considers these

cupolas to be Byzantine "because they were in existence when Grelot described the building in the seventeenth century." The former existence of a Turkish finial ornament is indicated by the presence of an iron dowel in a leaf-filled hole at the top of the pinnacle.

³¹ E. Oberhummer, *Konstantinopel unter Sultan Suleiman dem Grossen, aufgenommen im Jahre 1559 durch Melchior Lorichs aus Flensburg*, Munich, 1902, p. 11 and pl. VI.

Camii on the Galata shore of the Golden Horn, and he consequently shows us the north and west sides of the mosque. Of the two minarets, that at the left is necessarily the northeast because the buttresses of the north side of the building stand between it and the artist. The other minaret cannot be the southeast, which was standing at the time, for its tip, if visible at all, would have appeared at the right of the pinnacle of the dome, but since we know that its original height was increased in the nineteenth century, it may not have been visible to Lorichs. The second minaret, on the other hand, which clearly rises at the south side of the west window and between the artist and the southwest buttress, can stand only on the south turret.³² Here, then, in a drawing made seven years before Selim acceded to the throne we find confirmation that the northeast minaret, at the left, was built by Bayazid II. We also see the bell-tower over the central door of the west façade, but the drawing contains no other feature which might be interpreted as a wooden minaret. The total absence of such indications may lend weight to the earlier suggestion that the wooden minaret, to which there is but a single reference in Turkish documents, was in fact this tower. But if any doubt remains regarding the minaret on the turret, a second drawing shows it from a different angle.

The Freshfield sketch by an anonymous artist³³ also depicts Hagia Sophia with two minarets (pl. xiv, b). It is one of a series of tinted drawings thought to have been made in 1574 because another in the same folio bears a notation to the effect that it was sent to Vienna in January, 1575. The point of view of the artist in this case is at the north end of the Hippodrome and, facing slightly north of east,³⁴ he shows us the south and west sides of the mosque. The minaret at the right unquestionably is the southeast. That at the left cannot be the northeast, which we know from Lorichs' drawing was standing at the time, because it would have appeared, as is shown by a photograph taken from the artist's position (pl. xiv, c), behind and at the right of the pinnacle of the dome. Efforts to determine conclusively whether or not the second minaret stands on the south turret are hindered by two considerations. First, the precise relationship of the minaret to the turret cannot be detected because an intervening building cuts off its base, and second, it might be the present southwest minaret, construction of which was authorized by the firman of 1573, since from the artist's point of view (pl. xiv, c) the latter, if finished by 1574, would have stood in direct line with the turret. Closer examination proves, however, that it cannot represent the existing minaret.

The Freshfield sketch, though somewhat out of proportion as to general outline, records individual features of the building with remarkable fidelity, and in view of this accuracy we may be reasonably certain that the single minaret drawn by the artist was the only one then visible along the west façade. Its shaft appears to be smooth and contains two lighting slits, whereas the shaft of the existing southwest minaret is distinguished by sharply defined vertical divisions and contains no lighting slits observable from the artist's position. Lighting slits also are indicated in the southeast minaret, but here they correspond closely with the three we see today (pl. xiv, c). Thus we are given an accurate picture of the southeast, and it seems improbable that the artist has omitted from the southwest minaret the vertical

³² *Ibid.*, p. 11. Oberhummer, realizing that the drawing was made before the accession to the throne of Murad III, to whom he attributes the western minarets, and overlooking the fact that the minaret at right rises before the west façade, is of the opinion that Lorichs shows the two eastern minarets.

³³ E. H. Freshfield, "Some Sketches Made in Constantinople in 1574," *Byz. Zeitschr.*, xxx, 1929/30, pp. 512 ff., pl. II.

³⁴ *Ibid.*, p. 521. Freshfield mistakenly suggests that the artist is facing southeast.

panels he could see and added lighting slits which did not exist. For these reasons and because there are no disparities in scale or character between the minarets shown in both early drawings, we are forced to conclude that the Freshfield sketch pictures the same minaret on the south turret as that drawn fifteen years earlier from a different angle by Lorichs.

If this conclusion is correct and if 1574 is the proper date of the anonymous drawing, it is obvious that neither of the identical western minarets had been completed before Selim's death in December of the same year, and it may be worth while, despite some indecisive points in the available evidence, to attempt a reconstruction of the events affecting the six minarets which have at one time or another been attached to Hagia Sophia.

V

The call to prayer for Moslem services which commenced at Hagia Sophia within a few days of the fall of Constantinople appears to have been made from a tower, partly of wood and probably of Byzantine construction, standing over the main entrance of the mosque. This tower seems to have been employed temporarily, pending completion of a taller minaret on the turret at the south side of the west window.

When Mehmed the Conqueror decided, at an unknown date between 1453 and 1481, to endow the mosque with a minaret of monumental proportions, the entire structure, neglected during the last years of the impoverished Byzantine empire, may have been in need of repairs. It may have been decided to combine the erection of the minaret with necessary structural consolidations, and since the traditional requirement as to location for a minaret was already fulfilled by the heightened south turret, the sultan appears to have faced a free choice. He may have been moved by the following considerations to build the minaret on the spectacular site afforded by the piling of a buttress against the obviously deformed southeast corner of the mosque. Standing near the sharp decline of the ancient acropolis toward the sea and towering over, to the south, deserted palaces of generations of Byzantine emperors, it might have been conceived as not only a minaret but also a warning of Turkish authority to vessels far out on the Sea of Marmora. In the absence of concrete evidence explaining its location, this reason would seem to justify placing the minaret at the southeast corner rather than the traditional southwest, where, a hundred meters back from the edge of the slope, its relative height and impressiveness would have been diminished.

No choice seems to have been open to Bayazid II when, some time between 1481 and 1512, he undertook to enrich the mosque with a second monumental minaret, for to add it at any corner but the northeast would have created an anomalous arrangement with two along the same side or one each at diagonal corners.

In April, 1573, the need for repair of external buttresses and the tower over the main entrance, which may still have been used on occasion for the call to prayer, was communicated in routine fashion to proper authorities. In due course a firman was issued by the State Council, in the name of Selim II, instructing Mehmed, one of the Imperial Architects, to undertake the necessary repairs. Possibly as Mehmed got into the work he realized that the condition of the mosque demanded more extensive consolidations; but possibly, too, he found himself unable, without more authority, to proceed with the restoration of buttresses which had been preempted by squatters who refused to be evicted. New representations to this effect reached the attention of the sultan himself.

Selim, on learning of the state of disrepair into which the mosque had fallen, made an official visit for the purpose of conferring with the Chief of his Imperial Architects and other

authorities. After this personal inspection he issued a detailed firman on June 22, 1573, appointing Sinan to do everything necessary for the security of the building, and in addition to remove a minaret from the south turret and build another at the southwest corner. The scale of the restoration was so great, however, that Selim, because of his untimely death in December, 1574, did not live to see the completion of the works he had initiated eighteen months before.

Murad III, on his sudden accession to the throne, found his father's program nearing fulfillment and anticipating the erection of but a single minaret. Yet two identical minarets were built at this time, either because Murad took advantage of the opportunity to endow another in his own name, or because Sinan had decided that the arrangement of minarets should be formalized by adding, at the northwest corner, a fourth, duplicating the design already prepared for the southwest. It would appear, therefore, that though both western minarets were finished during the same restoration, the south one of the pair might properly be ascribed to Selim, who initiated the repairs, and the north to Murad in whose reign they were brought to completion.

A very minor and, doubtless, unanticipated incident during these activities resulted from the removal of the minaret from the south turret. After its shaft had been pulled down, the remaining stump was capped with a small cupola of the form commonly built in the sixteenth century. The turrets, however, were no longer alike, for the north still retained its sixth century vault of low curvature. For the sake of appearance, Sinan was obliged to cover the north turret with a vault like that he had just built on the other. In order, probably, to permit the passage of men and materials into the useless space between the vaults, or for some other practical reason, the hole that exists today had to be cut through the crown of the sixth century vault.

While the sequence of events suggested above may eventually have to be revised in the light of information not available at present, the south turret has been identified as the site of a former minaret. Circumstances connected with the erection of Hagia Sophia's present minarets identify this, we believe, as the first minaret raised after the Conquest of Constantinople.

BOSTON, MASSACHUSETTS

June 1949

ARCHAEOLOGICAL INDEXES*

A REVIEW ARTICLE

INSCRIBED TO MISS LUCY A. PATON

EVERY index, if it has any excuse for being, is a practical thing, a tool. Theorizing about indexing—about the needs and kinds, the criteria of quality, and even plans for a definite job—must therefore proceed strictly within the limits of practicality; although the theory may urge that eventually the accepted limits of practicality be enlarged. Thus, despite the fact that indexers face similar problems in all humane and social areas, the procedure most likely to yield sound results is to theorize abstractly (if at all) only after studying the general principles in one definite area; and to elicit general principles in one definite area by first examining the several actual leading indexes in that area; and finally, i.e. before all else, to scrutinize with special care the most recently published major index in the area.

This procedure is the one adopted in the present article, which therefore begins at the small end; but it may be noted by those who are willing to take the earlier steps for granted, that the pages on general principles (Part IV, pages 50-54) are intended to be intelligible and useful even if read separately, by a non-archaeologist.

Part I deals with the new *Hesperia* Index as a whole, and is meant to be helpful to those who consult it. These pages are also intended to introduce some of the problems of indexing. The *Hesperia* Index is divided into two main sections, "Epigraphical" and "General." The "General" section is largely archaeological; this is examined critically in Part II of the present article. Part III describes several indexes of European archaeological journals, indexes which also have faults, though some excellencies are noted and one index is found to be superior to the others. In Part IV an effort is made to formulate general principles. Part V is reserved for an appraisal of the Epigraphical sections of the *Hesperia* Index.

I. THE *HESPERIA* INDEX AS A WHOLE

HESPERIA, INDEX TO VOLUMES I-X AND SUPPLEMENTS I-VI, American School of Classical Studies at Athens, 1946. Pages vi+266. 4°.

Although practically unnoticed by reviews or otherwise, the publication of the *Hesperia* Index is a notable event. The eminent quality of that periodical is surely beyond dispute. This is the first general index of *Hesperia* to be published. It is moreover the first extensive archaeological index published in this country since 1908. It is also one of the most extensive

* EDITORIAL NOTE. This study was undertaken by Mr. Dow when an examination was being made by himself, as President of the Archaeological Institute, and by the late John Franklin Daniel, then Editor-in-chief of the *AJA*, of the possibilities of publishing an Index for the *AJA*. The Indexes already published for the Journal are the Index for First Series, I-XI (1885-1896, all published), by V. L. Collins, printed in 1899, and the Index for the Second Series, I-X (1897-1906), by Miss Lucy A. Paton, printed in 1908.

Both these volumes are now out of print. Miss Paton also completed cards for an index of the second Series, XI-XX (1907-1916), which was never printed. Work on an Index was also carried on under Professor William Bell Dinsmoor, then President of the Archaeological Institute, by Miss Helen S. Searls. Pending further progress in the compilation of an Index to the *AJA*, Mr. Dow's study is published now because of its interest to all archaeologists.

archaeological indexes¹ ever published. These are external aspects, not proofs of quality; and it must be added that the *Hesperia* Index does not advance the art of archaeological indexing. Nevertheless, even if the Index falls short of perfection, it is a major tool of epigraphical and of general archaeological scholarship. To criticize it without gratitude would be as wrong as to accept and to use it without examination. The makers of this Index have put us all in their debt.

The *Hesperia* Index is unsigned. Responsibility and gratitude alike cannot be particularized. There is no (announced) editor. It is fair to mention this peculiarity because the book needed, above all, at least a few days of careful editorial revision; and because, in the epigraphical index, many personal, subjective statements occur. One scholar only is mentioned in the (unsigned) Preface: "The Epigraphical Indexes are, in the main, the work of Dr. A. E. Raubitschek, but it is to be remarked that many people, working at different times, shared in their preparation."

The scope of the Index is the first ten regular annual volumes of *Hesperia*, dating from 1932 to 1941 inclusive, and the first six Supplements, published in the years 1937 to 1941. The "Index of Inscriptions Studied or Emended," however, covers *Hesperia*, Vols. I-XIV (1945), as well as the first seven Supplements. A list of the Supplements is a necessity in handling the Index, but is nowhere given. They are referred to merely as "SI," "SII," "SIII," and so on. Fortunately, the list of supplements can be found on the front brown paper cover of the volume, which should be preserved in binding. The regular volumes are referred to simply by Roman numerals; the figure next following refers to the page; after this, parentheses may contain the number and line, as of an inscription. This usage is simple, compact, and clear, and is retained in the present article wherever no confusion threatens.

The total number of pages indexed in the six Supplements is close to 1034, exclusive of the 101 pages in them devoted to indexes. In the ten regular volumes the number of pages is 4904, exclusive of 99 pages of indexes (eight pages are an index of pottery; the other 91 pages are epigraphical indexes). The figures show the size of the task.

Some Agora material, chiefly inscriptions, has received its first publication outside the pages of *Hesperia* during the years covered by the Index. This material is not included in the scope of the present Index. Whether or not it should have been included, the list of it might well have been published, or re-published, in the Index volume. In X 398-401 is printed a list of Agora inscriptions published outside *Hesperia*, but this list is not referred to in the Index.

The present Index is not, and perhaps should not have attempted to be, all-inclusive. It does not supplant all the indexes, for instance, in the six Supplements. References are made, not prominently in the introductory matter, but obscurely under certain items in the "General Index," to these special indexes. The afore-mentioned 99 pages of indexes in the regular volumes of *Hesperia*, mostly epigraphical, are not duplicated in the new Index, but are not referred to at all.

A major fact about the present Index, indeed, is that it contains no words directly from inscriptions except names of persons. All names of persons in epigraphical texts in I-X and SI-SVI are given; but for epigraphical mentions of Buildings, Deities, Ethne, Festivals, Months, Poleis, Tribes, and the like, and all "general" epigraphical words, the reader must still turn to

¹ On the plural of "index" in the present meaning, see the *New English Dictionary*, s.v.

"Indices" is good usage in various other meanings,

and should be reserved for them; it is pedantic in the present sense.

III	122-128	SI	250-258
IV	99-107	SVI	179-204
IV	587-590		
V	433-441		
VI	466-468		
VII	153-160		
VIII	85-90		

Apart from one or two minor exceptions, the only epigraphical indexes published in *Hesperia* since Vol. VIII (listed *infra*, p. 55) have been indexes of personal names.

The clerical work and proofreading are up to the high standard which *Hesperia* and other Athens School publications have long maintained. The following corrections are slight.

Page 12, col. II, line 22: the missing closing parenthesis belongs at the end of the line, before the semi-colon.

Page 26, col. II, line 12: for "treasurer" read "secretary."

Page 82, col. I, line 36: add "of" after "father."

Page 113, col. II, line 18: a superfluous parenthesis has slipped in.

Page 161, col. II, line 4: for "iof" read "of".—Here the inscription has [. . .]|ρου, which has been given in the present index only as a nominative [. . .]ρος, whereas a genitive in -ρου could equally well come from a nominative in -ρας.

Page 175, at no. 8253: for "Serapion" read "Sarapion," to make it clearly appear to be the same as the three following entries.

Page 231, s.v. KLEOMENES: for Argolia read Argolis.

Page 252, for QUARIES read QUARRIES.

The format is wholly pleasing. The paper is thick, light, non-glossy. It will take pencil and ink. The comfortable margins allow plenty of space for writing, but still there is an ample body of print—sometimes 50 or 60 entries—on each double-columned page. The type is legible and pleasing. The General Index is set with the items indexed printed in capitals; if the second and following lines had been indented slightly under the capitals of the items, the effect would have been clearer. As a whole the volume, though plump, is fairly light and easy to use.

Epigraphy dominates: the epigraphical indexes come first, and fill the first seventy-one per cent of the volume; all other branches of archaeology come in at the end. Epigraphical references are abundant also in the remainder of the volume, viz. the "General Index" (pages 191-266), which is the only index not exclusively epigraphical. These facts could be made the basis of unjust criticism. Perhaps the (more important) General Index should have been put first: that depends on whether readers prefer to open a volume from front or back, and it matters little. As to the proportions of space, 71 for epigraphy as against 29 for all else, unfavorable verdicts are likely to disregard a simple fact, viz. that names from epigraphical documents require much space in an index, whereas "general" matters take less. Thus, for instance, the citizen Κέφαλος Κεφάλου [Περιοίδ]ης occupied parts of only three lines in the text (SI 104), but in the Index (p. 89) he and his father must appear separately, and for each must be given the demotic, the date, authority for the date, the reference in SI, and the reference in *Inscriptiones Graecae*, II²: an irreducible total of six lines. In contrast, the discussion of the Parthenon pediment statue identified as that of the hero Kephalos occupies, with its related factors, two pages in *Hesperia* (I, 27-29), but this Kephalos can be indexed (p. 231) more or less adequately in one line. The proportions of space allotted are therefore not in themselves a fair target of criticism, in the sense that a name from an

inscription may need twice as much space as in the original publication, whereas one line in the index may settle for a page or more in the text where some non-epigraphical matter is concerned.

The reader will soon be struck by the number of proper nouns in the General Index. Thus under the letters A, B, and C there are in all 655 main headings, of which only 140 at most are common nouns; the rest are names of persons, deities, tribes, cities, etc. In fact, for any given name it is necessary, though it is not always profitable, to look in both the Epigraphical and General Indexes. For example, "Epaphras" appears in both, with a reference to SVI 144 in the Epigraphical Index, this being the Greek epigraphical text; and to SVI 145 in the General Index, this being a translation of the text into English. Could not the second entry have been combined with the first, so as to put Epaphras all in one place? EPARCHIDES and EPARCHOS are cited in the General Index as having been restorations proposed for a certain inscription. But would anyone naturally look in the General Index for them? Would it not have been better to enter them instead in the "Index of Men and Women," from which they are now absent?

Similarly with the mint magistrates, whose names appear on coins; they would more conveniently be found with their fellow Athenians in the "Index of Men and Women"; as it is, the mint magistrates are wholly confined to the "General Index," where some appear in the Greek abbreviations (usually unresolved), though others are given with Latin letters and fully spelled out.

An editorial decision was reached, evidently, to call the main indexes "Epigraphical" and to include in them all personal names which actually occur (or have been restored) in the texts themselves of the inscriptions indexed, but to exclude all other mentions of personal names, reserving them for the General Index. In this way the reader can know that the names in the "Epigraphical Index" are all epigraphically attested in *Hesperia*, and the facts about them can also be understood to be epigraphically attested in *Hesperia*. Further, restorations and doubtful readings can be indicated as such; and, in fact, this has been scrupulously done. Some slight deviation was necessary to put all the names into the nominative case, but I have come across few instances where this is at all misleading; nevertheless, like all of these principles of procedure, it ought to have been stated.

The suggestion may be offered that these indubitable advantages could be preserved, and at the same time all the personal names could be gathered into one index, and all the commentary on them could appear in the same index, simply by putting all personal names into a single index printed in two different fonts of type, so as to distinguish personal names actually found in inscriptions (including coins) from all other personal names.

We shall see *infra* that the present is not the first instance where indexers have drawn too rigid a line between "epigraphical" and "general" categories.

II. THE "GENERAL INDEX" IN THE *HESPERIA* INDEX

Almost 6000 pages have been indexed in only 76 pages. A miracle of compression, a complete impossibility, was called for. Of course the miracle did not occur; but the amount of material in the General Index is nevertheless impressive, and it deserves to be much used, despite the limitations which will become evident.

The scheme of the General Index called for subsuming items found on a given site under the name of that site. Thus everything associated with Aigina (*sic*; but AEGEAE; no cross reference in either case) is under AIGINA, as it should be. When we come to Athens, how-

ever, some question arises as to whether exhaustive entries should have been made under **ATHENS**; and if so, where to stop. Actually, **ATHENS** is given no less than $11\frac{1}{2}$ columns. This, the longest single entry, is an index in itself; and under it, five columns are given to **AGORA EXCAVATIONS** (although the **ACROPOLIS** items are broken up), which is thus an index within an index within an index. It is not always easy to remember this, or to find your way about in it once you have remembered. A better scheme might have been to make more major independent entries—after all, a very large proportion of *Hesperia* is Athenian—entering mere cross-references under **ATHENS**. Consistency with such petty entries as those for **Aigina**, **Corinth**, etc., should not have been sought.

Next in size comes a series of massive entries: **ARCHONS** (in alphabetic order), **COINS**, **INSCRIPTIONS**, **POTTERY**, **SCULPTURE**, **VASE Painters**. On **SCULPTURE** there have been few *Hesperia* articles: nine only are indexed, but they include, besides Shear's *Agora* reports, R. Carpenter's two on the Parthenon. Interest in pottery and material for ceramic studies have been much more abundant: a column is required merely to list the *Hesperia* articles *s.v.* **POTTERY**, among which R. S. Young's important study (SII) is only one item, though the most considerable. For **ARCHITECTURE**, oddly, just three somewhat puzzling lines are given, and under **ATHENS**, **AGORA EXCAVATIONS**, **BUILDINGS**, there are five lines. **ARCHITECT**, **ARCHITECT'S Mark**, and **ARCHITECTURAL Members** contain a little more; there is another independent entry, **BUILDINGS**, which appears to belong under **ATHENS**. Architectural studies need concede nothing in comparison with any other study fostered by the School and by the *Agora Excavations*—witness Supplements III, IV, and V—and it is a pity that the material is not made easily accessible for others than specialists, who will know it already, or will think to look under **ATHENS**, **AGORA EXCAVATIONS** for **APSIDAL**, **ARCHITECTURAL Studies** (one article cited), **BOULEUTERION**, *et al.* **COLOR** has only five references; it lacks a sixth, which has slipped in under **ARCHITECTURE**. **BUILDING Materials** also has five references—from ten years of digging!—and needs to be pulled together from entries which can be located only by the specialist who knows already what the materials are and hence can imagine where to look: **STONE** will have nothing, but he should try **ACROPOLIS Limestone**, **HYMETTIAN Marble**, **KARA Limestone**, **MARMARI**, **MASONRY**, **METHANA**. Even so, **HYMETTIAN Marble** is really of little help, since there is reference to one building only. Under **MOULDINGS** there are but four references.

This sample suggests that the General Index has not received the same care and zeal as will be evident in the Epigraphical Indexes. Nevertheless, there seem to be many excellent entries, especially where the matter admits of compendiousness and precision, e.g. **FESTIVALS**, **GRAFFITI**, **HOUSES**, **IVORIES**, **LAMPS**, **SHIELD Devices**. All of these invite one to explore, as a good index should, with the feeling that the index is a reliable guide.

Nevertheless, if one goes on to read more widely in the General Index, misgivings increase.

Another example will show the need of some pulling-together of references. Suppose a scholar is interested in learning what the first decade of *Agora* excavations added to our knowledge of ancient ships. He will find two references under **TRIEMES**, six (only two articles) under **SHIPS**, one each under **ANCHOR**, **FLEET**, **NAUARCHS**, **NAVAL Record**, **OAR**, and **PROW**, but no cross-references at all. Similarly with the military art.

There is one reference to **CONSTITUTIONAL Records**, no entry whatever under **Constitution**, **State**, **Democracy**, **Demos**, **Aristocracy**, **Council**, or **Ekklesia (Ecclesia)**; but there is an entry—just one—under **ASSEMBLY**. Many more cross-references are needed. **DIKASTERIA** does not quite duplicate **COURTS OF LAW**, but neither refers to the other,

nor to DIKASTS. "Heliaia" is lacking. Under BOULE; under ATHENS, AGORA EXCAVATIONS, Bouleuterion; and under the words in PRYTAN-, some of the Agora's large contribution to knowledge of the remarkable Athenian government can be located—if you already have some conception of what you are looking for. Yet OFFICIALS has five entries instead of a hundred, and ARCHONS is a mere list.

As with architecture, and even more as with the constitution, politics, and social problems, so with religion. There is no entry "Religion," there is one reference under RELIGIOUS Organizations; GODS has one reference; there is no entry "God." CULTS, however, has half a column, but it is incomplete, and it fails to refer to the half-column under ATHENS, Sanctuaries, which also fails to refer to CULTS, while both disregard ATHENS, Temples, and only one refers to ATHENS, AGORA. Entries on specific deities are better, e.g. APOLLO, ZEUS. Under CALENDAR the distinction between "sacred" and "sacrificial" is unreal.

To descend now to humbler matters. DOTTED Theta would be looked for under "Theta," for which there is no entry. There is a millstone under MELOS, but not under "Millstone." The Agora's handsomest terracotta is not under "Boy" (there is no such heading) but under KNEELING Boy. The memorable shield from Pylos, similarly, is accessible to those looking up PYLOS, but is not mentioned under SHIELDS. A purist, or even a serious scholar, might find a few matters of orthography to comment upon. KLEROTERIA duplicates CLEROTERIA, perhaps wisely, but KADMOS, KEPHISOS, KLEON, and many other words in K- do not appear under C, although the famous CLEOPATRA is under C but not under K.

There is no index of Authors and Passages commented upon, emended, etc. The General Index has six references to Pausanias, four to Plutarch, three to Aristotle, though none specifically for his *Athenaion Politeia*.

Not only is there no Index Verborum, or Potiorum Verborum; there is not even any satisfactory index of subjects of inscriptions. Thus in the General Index *s.v.* EPHEBOI: inscriptions honoring, only two ephebic inscriptions (II, 149, 159) are referred to, whereas in fact many more have been published: they are only to be found under INSCRIPTIONS, DECREES. The athletic inscriptions find no mention under "Athlete" or "Athletic" (there are no such entires), but only under INSCRIPTIONS, DEDICATIONS, in the mere set of page references; here II 159 is omitted. STELAI has just four references; ERASURES, nine; MONTH gives a single reference, which is to a footnote dealing with months, in Tinos and Eretria. SECRETARY has seven references, and there is no entry "Grammateus"; whereas TAMIAI has four references, while two more appear under TREASURER. In all of these cases, where scores of references could have been given, the complete omission of the heading from the Index might have been less misleading. Thus CHECKING CLERK has one entry, CITATIONS two, MONOGRAMS one, PRICES one.

Suppose, instead of looking for the results of excavations, results such as can be used by a scholar in his study, we examine the General Index from the point of view of the excavator. *Hesperia* has carried all the reports of Broneer's excavations on the North Slope of the Acropolis: the total number of pages runs to over 600. Hitherto of course no one of these reports has had any index. Now the present index (p. 203) lists the articles, and then, for the whole 600 pages, adds an index of exactly 20 lines. Doubtless there are many other entries of North Slope items scattered through the General Index. Even so, there seems to be a gross disparity between the treatment of the Agora excavations and of those on the North Slope.

If, to sum up, many of us would have preferred to see the time and money go into a more complete index of subjects, both epigraphical and non-epigraphical, we may nevertheless rejoice in *some* good archaeological indexing.

A word about the needs of teachers. A specialists' journal is apt to forget them. In the various numbers of *Hesperia*, plans have been published of individual buildings, of groups of buildings, of the whole Agora, and so on. The plans of individual buildings are accessible, of course, through the Index under the name of each building; but the plans, e.g., of the Agora as a whole are not thus accessible, and apparently are not in the Index at all. Yet no one item, perhaps, in all the pages of *Hesperia* is so constantly needed by student and teacher, nor so difficult to locate: since the tables of contents of the various volumes do not give all plans, it is necessary to thumb through many pages before the desired page or plate is located. The principal missing references are as follows:

For the Sections (earlier called 'Sectors') of the Agora area, which are each designated with one or with two Greek capital letters, and which form the basis of the scheme of reference for the whole excavation, reference should be made to *Hesp.*, VI, 1937, p. 335, fig. 2.

A plan including classical buildings in the area extending from the Propylaia on the Acropolis to the farthest northwest boundary stone of the Agora appears in *Hesp.*, IX, 1940, plate I (facing p. 308). Athens as a whole in the second century after Christ: *Hesp.*, VI, 1937, p. 2. An air photo: *Hesp.*, VII, 1938, p. 312.

For the Acropolis, see Suppl. III, pp. 38, 87; for the North Slope, etc., *Hesp.*, IV, pl. I, also *Hesp.*, VIII, pls. XI, XII, XIII; for the Pnyx, *Hesp.*, V, p. 157, fig. 7, and pl. I.

For locations and restored elevations of Agora buildings, see *Hesp.* VI, 1937, pp. 54, 133, 219; pls. I-VIII; *Hesp.* VIII, 1939, p. 203.

III. OTHER ARCHAEOLOGICAL INDEXES

In this section, six indexes of four foreign archaeological journals, including in each case the most recent index of the journal in question, are examined to see what experience indicates for the future.

The *Register to Ath. Mitt.* XVI-XX (pub. Athens, 1897), has just 21 pages of "Sachregister," three pages "Zur Erklärung antiker Schriftsteller," a "Verzeichniss der Mitarbeiter," and all the rest (53 pages) is epigraphical, Greek proper names being in the same index as other words; there is a goodly amount of each. "Fundorte der Inschriften" is a useful index to a journal in which many sites are represented. In all, 81 medium-sized double-columned pages.

The *Table Générale* (published Paris, 1889) to the *Bulletin de Correspondance Hellénique* makes a clear-cut division between "matières archéologiques" (pages 1-70) and "matières épigraphiques" (pages 71-216; the pages are of medium size, double-columned). The first principal index, the "Table des Matières," i.e. the general archaeological index, uses bold-face type for headings and is commendably legible; Greek words appear as headings along with the French; and there is a full entry "Corrections de textes" which ought to be imitated in other indexes, since a positive correction of a text has a different status from a remark which illustrates a text. The inscriptions have an index of provenances, then of Greek proper names (nearly 100 pages), then of "Noms de choses grecs," which excludes, for the most part, all words but nouns.

The British have brought the indexes of two of their journals nearly up-to-date. Throughout, they have used for indexes adequate-sized (quarto) pages. In the most recent *Index* to the *Journal of Hellenic Studies*, viz. that to Vols. XLIII-LX, published in London on 30 Dec. 1942 as part of Vol. LXI (1941), the numbers of volumes are in bold-face (Arabic, of course), which is less clear and easy than the excellent French use of bold-face for the headings; if bold-face is to be used, it should be for the headings only. First there is an "Index of

Authors," including authors of reviews, then a "General Index of Subjects" (38 pages), largely but by no means exclusively composed of proper names. Vases in museums receive especially full lists; this feature is worthy of imitation (the *Hesperia* Index entirely lacks "British Museum," "Metropolitan," *et al.*). On the other hand, the *JHS* index, under the more inclusive headings such as "Art," "Architecture," "History," "Inscriptions," "Vases," surely has inadequate entries. This index covers, at least to some extent, the contents of the reviews. An "Index of Classical Authors" follows, with copious cross references to the Index of Authors.

A "Greek Index, including proper names but excluding epigraphic material," extends for four pages. The font of Greek type seems too small; but the pages are spacious. Then, in the same format, "Epigraphical Index," in four separate indexes as follows:

"A. Greek Words and Phrases, including names of festivals, months, statues, temples, and official titles."

"B. Proper Names, personal and geographical."

"C. Geographical" (not in Greek type).

"D. Published Inscriptions, discussed or republished."

The sharp division between "*matières archéologiques*" and "*matières épigraphiques*" and between Greek type and English, thus puts geographical names in three different indexes, viz. in the General Index and in two Epigraphical indexes.

The volume concludes with a notable 27-page "Index of Books Reviewed," a rare and a good feature of the volume, though any new contributions made in reviews ought to be noticed, as apparently has been done, in the General Index.

The predecessor of this volume, which covered *JHS* XVII-XLII and Supplementary Paper III (this index was published in London in 1923), had several features which are worth recalling. The index of authors is printed in a single-column page, with a line to each title. Though it consumes space, this form of presentation, making the entries into a check-list, is surely the most legible, useful, and satisfying. In the (general) index of subjects, a distinction is made between incidental references and references to complete articles: the latter are indicated by putting the title in bold-face (Clarendon) type, followed by the authors' name in parentheses. Choice of type apart, any device which plainly indicates what is important should be prized. In the general index also, the longer entries are helpfully broken up by subheadings in italics. There is just one (inclusive) Greek index, a feasible arrangement when names are few; included are various monograms and numerals; at the end, several symbols for numerals and the like which do not have a place in the Greek alphabet. There is also a useful-looking "Numismatic Index," containing place-names and a few leagues; but for some reason not rulers and princes. It seems to me that a numismatic index, including rulers, principalities, and all other coining sovereign bodies, should be a regular feature of such large indexes. There is no harm in repeating the numismatic references in the General Index.

The *Annual of the British School at Athens* is indexed in two volumes: *BSA* I-XVI (London 1912), and *BSA* XVII-XXXII (London, n.d. [late 1938 or early 1939]). Of these the second resembles the *Hesperia* Index in that the whole is divided into two parts, "Epigraphical" (first) and "General" (second). Likewise as in *Hesperia*, the General Index is all one index, including within itself authors of articles; the *BSA* Index, however, has the articles nicely listed each on a line by itself; and with the titles of the articles in italics, whereas authors' names are put in caps. This seems to me very good. There is a separate "Index of Classical Authors Cited," the references being to pages of *BSA* only, not to those of the authors; there is no indication of matter, but the numerals run along in solid undifferentiated masses.

The whole General Index is contained in only 33 double-columned pages, an average of but two pages per volume.

The Greek font is a clear and attractive cursive; I think *Hesperia's* is more readily legible, if less elegant. The first Epigraphical Index is of "Proper Names"—including, as the small Note on page 2 states, gods and places, but not festivals and months. Festivals and months appear in "Notable Words and Phrases." This is so awkward that I feel sure it must be a result of editorial misunderstandings discovered too late; even if defensible, it would be anyone's guess where names of tribes in Greek would fall, or Greek names of buildings derived from the names of gods or men. Actually, *Αγείς* is under Notable Words; *Αγείς*, of course, would if present be under Proper Names. It happens that the total result is less bad than one might imagine, since the names of gods and places are few, so that the second index contains only a scant sprinkling of capitalized words; even so, the system was too elusive for the indexers themselves, and *Μουσαι* appears with an identical reference in both indexes. Buildings do not appear in the second index; I have not chanced on any in the first, and the problem may not have arisen. Demotics and ethnics are in the first index.

Few brackets are used in the Greek, so that the reader is not always sure how much may have been restored—contrast *Hesperia*—but the interrogation point appears frequently in such restorations as are indicated; it inspires confidence.

A "Geographical Table of Inscriptions" is brief, but the "Table of Publications Quoted" runs to 18 pages, rivalling *Hesperia*; for details of the principles followed and the format, future indexers are referred to the sensible note on page 24.

"Miscellanea," only ten items in all (p. 41), are lost, and should go in the General Index, even if they are epigraphical. No filing system, and no index, should have a part called Miscellaneous.

So much for the later *BSA* Index. The earlier has an "Index of Notable Greek Words and Phrases" with almost no capitalized headings, but the long entries under some headings, e.g. *πατρόνομος*, contain many names and are useful. The most notable feature of this volume, however, is the apparently near-ideal adequacy of the 98-page "General Index." The goal which the compiler, A. M. Woodward, set himself, was to go beyond the usual imperfect general index and to provide, in massive entries, full scholarly guides, or inventories, to the (then not finally published) sites excavated by the British and recorded in *BSA* I–XVI. Thus "Knossos" receives no less than 20 pages, and "Sparta" 13; these pages on Sparta are still indispensable to students of the site. Perhaps because the *BSA* has less in proportion on any one city, and because the spacing of the items makes for easier intelligibility, these big entries do not seem open to the difficulties that arise in using the *Hesperia* entry for ATHENS.

As a whole, this General Index of *BSA* I–XVI, an inspiring job, though imperfect, is still one of the best: it is informed by a conscious and intelligent purpose, and carried through, with good help, by a scholar. The result is syntheses not achieved earlier, surveys in the form almost of *catalogues raisonnées*, an index which is almost the outline of several systematic books. For this, a price has, admittedly, been paid: the site-headings get everything, whereas such general headings as e.g. "Pottery" are briefer, though still lengthy (nearly five columns on Pottery). The main principle was that *all* objects were to be indexed under the sites where they were found, with general headings, including cross-references, where necessary. The compiler explains all this on pages v and 46. The indexing principle of tying every object indexed to a site or a museum would seem to define one minimum requirement of a good index.

If now we turn back to glance once more at the General Index of *Hesperia*, it will be clear

that that index, though faulty in some details, is not more cut down, but rather is longer, than almost all other such indexes here considered. Many of the faults are common to them all. It seems appropriate to attempt a general discussion of the problems of archaeological indexes.

IV. GENERAL PRINCIPLES OF INDEXING

For about seventy years archaeologists have been excavating in classical lands and elsewhere more or less scientifically. This means that they have been tending to preserve everything which they considered significant. As time has gone on, they have considered that more and more of their finds are in fact, or may prove to be, significant. The catalogue of the Agora Excavations, for instance, contains thousands of objects. Many of these, fortunately, can be published in batches, but still the mass of more-or-less-unique, individually-mentionable objects is considerable.

Along with the increase in objects there has developed an increase in specialization, so that the array of printed facts elicited from the multitude of objects has also increased. The number of objects which any one scholar can know at first hand is proportionately smaller, and smaller also is the number of facts which he can assimilate in relation to all the facts that are printed.

Another way of looking at the matter is to consider scholars in their age-groups. The generation now mature or retiring grew up with the journals founded in the 1880's and 1890's, and has (comparatively) less need of indexes. The generation now in its 40's and 50's has had a harder task; I daresay many of them could wish for a better knowledge of material of lasting value, outside their specialties, published in the years *ca.* 1880-*ca.* 1920. The generation now beginning its researches has a task of enormous scope in assimilating even a knowledge of any one special subject, not to mention anything peripheral, in the long accumulated files of journals. Along with syntheses, summaries, and bibliographies, indexes are becoming necessities.

These are truisms, but their force is not sufficiently appreciated, especially when one realizes how many different kinds of person ought to be considered in relation to the problem of making materials available. The *specialist* himself, from his graduate school years on, has constant need of the results of other specialists. The *amateur*, on whom support ultimately depends in large part, should be able to find enough of what he wants. The *teacher*, perpetually forced to know something about many things, and to illustrate his teaching by forceful examples, is too often forgotten. Finally there is the *synthesizer*, the generalizer, the scholar who tries to extract the larger meanings. For specialist, for amateur, for teacher, and for synthesizer, indexes are one indispensable tool; and in making indexes, all four kinds of consultant ought to be kept in mind.

It seems reasonable to believe, therefore, that the day of great indexes is, or ought to be, at hand; and, without happening ever to have read anything systematic on the subject, I should like to initiate discussion of archaeological indexes in general. Somewhere in the fertile pages of his *Greek Commonwealth*, A. E. (now Sir Alfred) Zimmern has a few good words which long since made me realize what a pleasure a good index can be, and that skill in the use of indexes can be developed. We need more good indexes, and we need to teach students how to use them.

We have seen how difficult a task the making of a good index is. It is also true, I think, that almost any index, however poor, will reveal to any inquiring mind, not already conver-

sant with the entire body of material, items of interest. Certainly a poor index is better than none. The difficulties in attaining excellence should not discourage attempts.

There are three main types of index. The simplest and briefest is the *index based on the titles alone of the articles indexed*. Criticism on this topic may well begin at home, and a specimen of this type is the index of the first 50 volumes of *Harv. Stud. Class. Philol.*, an index which does not go beyond titles, and occupies 13 pages (HSCP, 52, 1941, pp. 147-159). Under the names of authors, page references alone, not titles of articles, are given (except for dissertations); these headings might help a biographer (if one should appear), but anyone else would get little aid. A more fundamental trouble is that such an index is misleading. Under Epigraphy, for instance, there will appear only articles containing the word Inscriptions, or the like; whereas an article devoted to editing inscribed decrees will not appear there, but only under Decrees—if the word “decree” appears in the title. This obvious weakness might perhaps be remedied, but only by departing from the principle of the index; and in that case it is difficult to know where to stop.

The second type of index, the middling, or compromise type, is the *index of leading topics*. Here the principle of selection is bound to be somewhat arbitrary, but it is fairly easy to decide to include at least all proper names of any consequence. This means at once an index much longer than any based on titles alone, and the result is correspondingly much more useful. For practical reasons, this type must necessarily be the one generally adopted, and the present General Index of *Hesperia* may serve as a specimen. The basic weakness of indexes of this type is that their arbitrary character places a burden of continual decisions on editors and indexers, a burden not present when a rigid principle of selection can be applied mechanically, as in the first and third types of index. For the indexer of “Leading Topics,” every page indexed involves decisions as to what to include, and as to where to print the entry. The personal interests of the indexer are apt to be reflected in the result, since any indexer who is a specialist is sure to favor his own specialty. The remedy, surely, is to begin by making sample indexes of diverse articles, which can be submitted to diverse critics; and similarly to submit the first draft of the whole to criticism and to editorial scrutiny.

Assuming that a complete index will usually be out of the question, and hence that some form of middling, compromise index of leading topics must usually be adopted, we may attempt to suggest what reductions from the complete form can best be made:—

1. If the material indexed contains numerous scattered articles on one topic, whereas some other topic is fully covered in a single article or group of articles within the series (e.g. the articles on the Praxitelean Hermes in *AJA*, 35, 1931, pp. 249-297), surely it is more important to draw attention adequately to the scattered material, and to let the one article or compact body of articles receive fewer references in proportion.

2. When all is said and done, some articles are undeniably more important than others. Among the less important are articles the contents of which have been disproved or superseded or not recently followed up (e.g. Italian painting in the *AJA*); theoretical matter never generally accepted (e.g. “dynamic symmetry”); articles on odd subjects such as stray into every periodical but remain isolated there (e.g. Eskimos in the *AJA*). To all such articles as wholes, references should appear; but in general, if reductions have to be made, with due caution they should be made in these cases.

3. Parts already fully indexed separately, such as those *Hesperia* Supplements which deal with matters sharply distinct from the rest of *Hesperia*. Lists and other special notices in the main index should call attention to these special indexes so prominently that they cannot possibly be overlooked.

We come now to counsels of perfection, but it is something to grasp what an ideal means, even if it can rarely be realized in practice. The third and ultimate type of index, which is definitely in the realm of ideals, is the *index which aims at a reasonable degree of completeness*. To cite an example is hazardous if not impossible: for my part, I have never been disappointed by the index to Arthur Bernard Cook's *Zeus*, but that may be luck. (In any case, I do not include Cook's text in this praise.) A. M. Woodward's admirable *BSA* index has been mentioned. A complete index would proceed heroically to analyze the material, and to consider how various students might wish to come at it by trying as it were to see all around the subjects involved. Such an index is in fact virtually a re-writing of the text. In one aspect, this goal has been attained in some indexes of Greek words—concordances, that is—in which every word is indexed, except perhaps the definite article and a few other words. Whether or not Cook's job is a model, the complete index is feasible for shorter books; feasible and often necessary.

So much for types of index. A word may be in place here on the basic functions common to all indexes.

Like any systematic list or catalogue, an index serves two fundamental kinds of purpose for all types of user. (1) It locates a discrete item—a particular volume or statue or person—on a shelf or in a museum or in a book. The consultant usually knows more or less exactly what item he is looking for. (2) It provides lists of materials for consultants who wish to inspect or collect a whole body of items.

This second function is most easily fulfilled when each item has a line to itself, as in certain of the British indexes examined *supra*. The index becomes a series of convenient check-lists. Lists of materials commonly felt to be needed, and hence often indexed separately, are: Rulers; Classical Texts Studied and Emended; Inscriptions Studied; Provenances of Inscriptions; Mints and Minting Powers. If this is done, however, names should receive cross-references in the Index of Names, and the other subjects should also be copiously noted with cross-references in the General Index.

Since we live in an age of "Overall Planning" (not all of which is well-considered), someone is sure to come forward with an argument that whereas all former indexes have been based largely on the mere accident of the order of letters in words and in the alphabet (this would be called "Semantic"), all future indexes should be based on the fundamental categories of Time and Space. This would not be completely foolish. A complete index might well tie every object to (a) its place of finding, and (b) if different its present location. Again, there might well be collections of material, or cross-references, for at least the more sparse periods. Thus the *Hesperia* Index usefully brings together a few, perhaps too few, leading references under GEOMETRIC. In all such matters, the indexer may well be inspired by imagination as to usefulness, but at the same time he should be restrained by practical "common" sense.

As to the practical making of indexes, a number of general principles and details have already been clearly brought out and do not need to be re-stated. For clarity and convenience, I venture to give here some principles which still may need reinforcement.

1. The number of separate indexes within an index volume should be as few as possible. The user should not have first to scan a long table of contents under the heading "Indexes" in order to locate the particular index he needs. Some of the Indexes of *Inscriptiones Graecae* are unhappy examples.

2. The division of matter between indexes should be as nearly self-evident as possible. The division most self-evident in most cases is that which groups real things by their natural kinds, even if the medium by which we happen to know them has to be treated as secondary.

An Index of Persons, for instance, should contain *all* persons, whether known to us from epigraphical, papyrological, numismatic, literary, or other sources.

The distinction between Epigraphical and General matter lays too much emphasis on the medium, and has been overdone. All persons should be together in one index; conversely, subjects of inscriptions, e.g. such headings as Decrees, Honors, Embassies, Treaties, Accounts, etc., should appear in the General Index.

So far as possible, the necessity for printed explanations should be avoided. If an explanation of the basis on which items are assigned to different indexes has to be given, then the basis itself is probably wrong. Ideally no user should be obliged to read anything but the index itself.

Symbols should of course be as simple as possible, but complicated material may demand the adoption of symbols which have to be explained. Thus for instance if it is desirable to indicate that certain of the persons in an index of persons are known from coins only, a special Greek font may be used for such names. The objection sometimes raised to such usage is that the looks of the page suffer, but in every index, superficial typographical beauty should be sacrificed to the higher functional beauty of usefulness.

As many page references as possible should have indications of contents. Thus, for instance, if 15 references to ships are to appear, five of them being to Egyptian ships, five to Phoenician, and five to Greek, then the 15 references should be divided up and given sub-headings accordingly. Above all, masses of undistinguished references ought to be avoided.

Cross references should be as numerous as the materials indicate. Good cross-referencing demands full knowledge of the material and imagination in conceiving how it might possibly be used. Here particularly the difficulties, especially in highly technical material, created by foreign languages ought to be borne in mind. A person not familiar with technical terms in a foreign language is especially helped by copious cross-references.

We come finally to the question of personnel. Hitherto most archaeological indexing would appear to have been done by chance volunteers. The simplest system is to submit a proof to each author of an article, with a request that words to be indexed should be underlined. This at least secures first-hand knowledge of the material, and is not a bad scheme provided the compiler of the index goes over all the material in order to introduce some degree of uniformity.

If chance volunteers do the whole compilation from the start, then editorial supervision is a necessity. The British have on occasion made use of a whole group of experts for advice and criticism.

A third scheme, not hitherto tried, would be to appoint an official Indexer to the staff of each periodical. Such a person might be a librarian, a museum worker, or a scholar without other commitments or opportunities. Such a person should have, of course, good archaeological training, and should consciously strive to become an expert in indexing. He should prepare cards for each number of the periodical as it is published. All possible mechanical aids, such as rubber stamps with variable dates, abbreviations, etc., should be available. Full recognition of indexing services should be given, and the job should be at least as attractive as much of the editorial work, which does somehow find volunteers. The rewards to an alert

indexer would not be slight, in the form of abundant, up-to-date, diversified knowledge. In this way the demands of modern archaeological indexing could be adequately met.

V. THE "EPIGRAPHICAL INDEXES" IN THE *HESPERIA* INDEX

The really remarkable part of the book is the five Epigraphical Indexes of Names: "Kings, Rulers, and Emperors" (pp. 172-174), "Latin Names" (p. 171), and first of all the great "Names of Men and Women" with two sequels to handle names imperfectly preserved and unrestorable (pp. 3-170). The importance of these indexes may be indicated by noting some statistics. J. Kirchner's *Prosopographia Attica* (1901-1903) has the names of ca. 16,600 Athenians of all the periods anterior to 30 B.C., to which J. Sundwall's *Nachträge* (1910) added ca. 2200 more. The present indexes contain ca. 5000 names of all periods, including a small minority of non-Athenians. Hence the volume under review is the most important publication in the study of Athenian prosopography since Kirchner.

Allowing for non-Athenians, for names occurring in more than one place, for names of the Roman period, and for a few other necessary reductions, we may note that the number of known Athenian citizens of all the periods down to 30 B.C. is now probably over 20,000.

The mere size, however, of the list is not its most extraordinary feature, but rather the extent to which the indexers appear to have examined photographs and squeezes, and studied the data, in order to improve readings, restorations, and identifications. All preceding students of Agora inscriptions, although they may have tried to deal carefully with names, have had to deal also, at the same time, with numerous other matters. In these Indexes a fairly systematic study seems to have been made of the names alone. It is surprising how little, comparatively, has had to be corrected, and I feel sure that any unbiassed observer would agree that the improvements over the *Corpus* made by *Hesperia* publications far out-distance improvements, actual and potential, made by anyone over Agora inscriptions, at least subsequent to Vol. III.

There is another, a very different, aspect of all these names which I feel moved to mention. If we stand off, as it were, and look at them in their thousands, they make a sort of spectacle—a cold, printed, alphabetized spectacle, it is true—but still a spectacle of masses of men whose lives have come through to us, for the most part, because each of them once did one thing which was recorded on marble. They are the middling citizens, the core of the state. It is wonderful how many have survived. The fascination of working over the records will always be confined to a few scholars; but somehow students of literature and the other arts, of archaeology, of science, and of philosophy, should not only be able to ascertain such particular facts as they may need for their own studies, they should also get for themselves a glimpse at least of the spectacle of the masses of middling citizens, mostly neither poets nor sculptors, neither tragedians nor philosophers, but men who in their totality were the creators of another work of human art, the classical state.

It is one service of the present Index to bring this spectacle again before us; and I venture to give here, for what little it may be worth, a subjective impression of one aspect of the whole. I think the mere numbers of men are significant. Granted all the factors affecting preservation in which accident plays a part, and granting that about 2000 of the names are from lists of prytaneis in which only one recurrence was admissible, it still remains true that large numbers of men took part in the Athenian government. The impression given by the records on marble is that the honors and responsibilities of Athens continued to be fairly widely distributed down through the fourth, third, and second centuries B.C.

Not only is the mass of names huge, but there is also a notable absence of long entries, such as would occur if (as has been alleged in one form or another) a small number of men passed the offices around among themselves. The longest entries in the whole index are not the honors granted to men obviously rich, influential, and highly honored, men such as the Kephisians Eurykleides and Mikion, nor even Medeios of the Piraeus; but instead the longest entries are mentions of the comparatively unimportant, semi-professional Heralds and Flutists of the Boule: the various men named Εὐκλῆς Τρινημεεὺς, Εὐκλῆς Βερενικίδης and Νεοκλῆς Βερενικίδης, who are known often simply because, with a strong voice and a talent for the flute, respectively, they were officials of the Boule and had to appear in prytany inscriptions — where their place is invariably a humble one (pp. 61–62, 111; SI 17–18).

Users of this new prosopography, for one reason or another, cannot open its pages and proceed as they would with Kirchner's. Before considering these aspects, we may note that several further indexes of names have appeared in *Hesperia* since 1941. It may be a convenience to the reader to list these here:

- | | |
|------------------------|---|
| XI no. 1 pp. 91–103 | XV no. 3 pp. 254–263 |
| XI no. 3 pp. 316–323 | XVI no. 1 pp. 53–54 |
| XII no. 1 pp. 89–96 | XVI no. 3 pp. 225–231 |
| XIII no. 3 pp. 267–268 | XVII no. 1 pp. 61–70 (also other |
| XIV no. 2 pp. 150–151 | proper nouns, and inscriptions studied) |
| XV no. 2 pp. 166–168 | (XVII no. 3 p. 194: ostraka found in 1947) |
| | SVII p. 167 (also a general index, pp. 167–172) |
| | (SVIII pp. 8–11: mint magistrates dated) |

Terms and references require a word. The "Index of Men and Women" contains at least one boy (*s.v.* Ἀφφίανός), and of course the simpler gravestones may in some cases memorialize children. For this and for other reasons, a more accurate title would be "Index of Persons." The Corpus uses *Index Virorum et Mulierum*, to be sure, but possibly this was because *persona* has unsuitable overtones. Lists of fallen, i.e. casualty lists like our own Rolls of Honor, are not accurately called "funerary," as throughout the Index, unless it is proved in each instance that their essential connection was with the funeral. The term "hero of Phyle" might mislead, or seem ambiguous, in a field where "hero" has a very different meaning; "veteran of Phyle" would serve better.

Frequent reference is made, though the full title is nowhere given, nor even the author's initial, to (Mrs.) Helen Pope's useful *Non-Athenians in Attic Inscriptions* (diss. Columbia; New York, N. Y.; 1935), which contains ca. 2400 names. They are now listed by cities in her *Foreigners in Attic Inscriptions*, Philadelphia, 1947. Neither book attempts to include any names in grave monuments nor apparently all the names in dedications.

Hellenistic dates are fixed by reference to W. K. Pritchett—B. D. Meritt, *Chronology of Hellenistic Athens*. The statement is repeated hundreds of times in the various entries, "For the date see *Chronology*." It would have been simpler to let the explicit statement which is given in the Preface cover all instances. Some Hellenistic dates are potentially affected by Pritchett and Neugebauer's *Athenian Calendar*, and new discoveries are forcing alterations. For Roman archons, Oliver's dates are followed (XI, 81–89). Recently Notopoulos has attempted to extend cycles to this whole period (XVIII, 1–57); I think he would agree that the theory fits the evidence better in some parts than in others.

A larger aspect is that, as we have seen, the prosopographical indexes actually advance the subject, or attempt to do so, on almost every page. I believe this to be unique. Moreover,

only a fraction of the real labor and the real contribution appears in print, since doubtless many readings were tested and found to be correct; it is a pity that somehow confirmations of this sort could not be recorded.

Any serious student will be grateful for advances in his subject, I suppose, in whatever form they are published. In the present instance, the form itself can certainly be questioned, and furthermore it can be doubted whether all the alleged advances are true advances.

Improvements in readings and/or restorations are usually indicated, in the *Hesperia* index, by a brief statement under the item in question—but not prominently, as by special type, and not elsewhere, in a special list. (By exception, the new reading *Μαχίλος*, p. 103, is not noted as such; I have re-examined the evidence, and believe the new reading to be correct.) Henceforward no one dealing with any of hundreds of inscriptions covered can be sure that in this vast index there may not be concealed some new reading of a name which, though in itself slight, may affect a date or an interpretation. In compiling *PA*, Kirchner marked with an asterisk every improvement made therein with respect to readings and restorations, and then collected all the newly read and restored names from the main body of the work so as to print them separately in a batch at the end (Vol. II, pp. 653–660); H. Pope (*Non-Aths.*, pp. 229–230) and others have regularly done the same. Thus all corrections of texts could be made without reading through the volumes. It is to be regretted that the workers on the *Hesperia* Index did not follow the precedents. On page 35, for instance, under *Γοργίων*, a new “restoration” of *IG*, II², 7031 is mentioned, but it turns out to be merely putting *Γ]οργίων [Νί]κωνος [Πα]λιανεύς* for *Γ]οργίων [Νείκ]ωνος [Πα]λιανεύς*. The difference in orthography, supposing it to be based on a correct determination of the space (I cannot check it), might have some chronological significance, since the son’s name does appear, ca. 20 B.C., as *Νείκων*; but it would only be by a coincidence that anyone would discover just here the new reading of *IG*, II², 7031.

On pp. 175–187 there is a triple-columned list of “Inscriptions Studied or Emended”: first come the inventory numbers of inscriptions in the Epigraphical Museum in Athens, then references to inscriptions previously published. Here too some few new improvements are ventured: they stand out prominently, and no criticism, so far as I have noted, can be made of the actual content of these proud pages, which give a clear notion of the considerable extent of the work on inscriptions found outside the Agora which is involved in the study of documents from the Agora excavations themselves. The only defect is the omission of improvements made in the present index.

Again, some special mark of type might well designate names of which the reading has been and ought certainly to be abandoned. Such cases are indicated by statements, but for quick scanning whole entries ought not to have to be read. This is especially true of names which even as Athenian names have evidently ceased to exist, e.g. *Πύρριχος* (*Φαληρεὺς*), p. 131. The convenience of students might have been more carefully consulted. Thus, under *Γλ]αύκος* (p. 34) it says, “see also [*Ἰππόν]ικος*”, which turns out to be an abandoned reading. Why not say, under the entry for *Glaukos*, “formerly read [*Ἰππόν]ικος*”?

Though surely the area of divergence can be very greatly reduced, practice in regard to how much to restore varies widely. In general, the present Index is less conservative than any earlier prosopography. In fact the policies followed in the *Hesperia* Index raise in acute form the whole question of prosopographical restorations and identifications. This question must be reserved for discussion elsewhere, but a few examples will show its nature. *Ἀγ[. . .]* (page 3, col. II, line 7) should be printed *Αγ[. . .]*, in view of all the names in *Ἀγν*-. Beginning with such simple instances, errors of increasing seriousness can be cited. Thus for

Hesp. IX, 112–115 (22) three names are restored, although logic, general practice, and the previous editor would admit only one as reasonably certain.

In at least one instance a more responsible policy would have averted error. The full details I hope to present elsewhere, but in brief the Index has an Andron and a Pyrrhias each as the (restored) name of the secretary of 124/3 B.C. In neither case is any doubt indicated by the indexer. Since both restorations apply to only one inscription, where there is just one patronymic and demotic, one only of the proposed restorations could possibly be correct. An explicit list of improvements claimed in the present volume would probably have eliminated the conflict. — Actually there is no sufficient ground for claiming either name as correct, and in fact the name had been left unrestored by D. M. Robinson, B. D. Meritt, W. K. Pritchett, and the undersigned.

Among other good things, *Hesperia* has been a citadel of specialization. Specialization is always under attack, and the attacks are tiresomely unintelligent; but it does seem fair to say that the specialist is under obligation to make his results available, in clear and reliable form, to anyone who may need to use them. The consultant of an index should be able to use it with full assurance that the index is objective and explicit — devoid of pitfalls, or as nearly devoid as possible, for the non-specialist — precisely because it is based throughout on recognized principles uniformly applied. Indexes are in another category entirely from personally signed articles of the subjective type, which rest on the author's "authority": as to such articles, there is an understood principle *caveat lector*. To indexes the principle *caveat lector* ought not to have to be applied, at least not to such factors as the indexer himself is responsible for. Kirchner's *Prosopographia Attica* is by no means faultless, but judged by the standards just mentioned, it is what it should be. In fact *PA* itself set the standards. The Epigraphical Indexes to *Hesperia* depart from these standards through the occasional introduction of subjective, hazardous, and even erroneous judgments. Fortunately such instances are, necessarily, comparatively few. A rough count seems to fix the number of entries containing such material at ca. 170–200 out of the total of ca. 5000. Moreover, some of the ca. 170–200, though out of place and uncollected in this Index, are probably correct and will represent, when tested, real advances of knowledge.

HARVARD UNIVERSITY
August 1949

STERLING DOW

ARCHAEOLOGICAL NEWS

THE NEAR EAST

ANN PERKINS, *Editor*

PLATES XV-XVII

EGYPT

M. J.-P. LAUER has reported on the 1948 activities of the Service des Antiquités in the region of SAKKARA. Abd Essalam M. Hussein continued the clearing of the pyramid temple of Dadkare at Sakkara and the investigations in the interior of the two great pyramids of Snefru at Dahshur. Clearance work along the road of Unas brought to light a second large solar bark dug into the rock and lined with limestone, parallel to the one discovered in 1938; M. Lauer suggests that these may represent the two barks of the day and the night. The work also led to the discovery of an intact shaft giving access to a group of rooms cut into the rock, in which were found wooden coffins containing the bodies of a family of scribes of the XXVIth Dynasty. A fine series of ushebti, as well as examples of the many kinds of amulets commonly found on mummies of this period, was recovered.

M. Lauer himself continued his restoration work on the entrance of the Zoser complex at Sakkara. He also undertook clearance work in the temple of Userkaf, partially excavated some twenty years ago by C. M. Firth, in an attempt to answer various questions posed by its abnormal position at the south of the pyramid. Because of the large pits dug in the area in Saite times, vestiges of the Vth Dynasty temple are rare, but M. Lauer was able to trace the north and south walls of the building and the two antechambers placed at right angles to each other which give access to the large pillared court, and also found granite doorsills which probably mark the southern doorway in the eastern wall. The work in the Userkaf temple will be continued next season.

DR. GEORGE HUGHES, new field director of the LUXOR EXPEDITION of the Oriental Institute of the University of Chicago, reports that the chief work of the 1948/49 season was the completion of the drawings of the Bubastite Gate from the

Great Temple of KARNAK.¹ Further work was done on the scenes of the Feast of Opet in the Khonsu Temple at Karnak. Next year's work will be concentrated on copying the reliefs on the terrace which leads from the second court into the sanctuary area of the temple of Medinet Habu.

ISRAEL AND ARAB PALESTINE

DR. S. YEIVIN, Director General of Antiquities for the state of ISRAEL, has sent news of last year's archaeological activities there.

One of the first acts of the newly established civil and military authorities of Israel was to protect the ancient sites and monuments in the territory under their control. At first this activity was exercised through archaeological officers attached to the armed forces, but in July, 1948 a Department of Antiquities was organized as part of the civil administration. Its head offices are in Jerusalem and Tel-Aviv, while field inspectors are posted in the northern and southern districts. Although some regrettable destruction of ancient remains was caused by military activities, numerous interesting discoveries were made in the course of trenching and other military works. Such discoveries were promptly reported, due to the close co-operation among soldiers, civilians, and the Department. A special body of honorary "Trustees of Antiquities" consisting of members of the public interested in the preservation of ancient remains has been created; the trustees undertake to keep the ancient monuments in their respective areas under constant observation and to report any new discoveries. The Department is able to make this report largely because of the zeal and good will of these voluntary assistants.

The most interesting of the new finds was that of a Samaritan synagogue of the early Byzantine period at SALBIT (Biblical Ša'albim), some three

¹ *AJA*, liii (1949), p. 43 and pl. x, A.

kilometers north of the Tel-Aviv-Jerusalem highway. The building was oriented toward the north with a slight inclination to the east; therefore the worshipers faced the principal Samaritan sanctuary on Mt. Gerizim. So far one wall and three fragments of mosaic pavement have been discovered; the pavement has geometric designs in three colors and an inscription: "YHWH shall reign for ever and ever" on the north border. This is the first instance of a Samaritan synagogue of such an early date, the first mosaic pavement definitely identified as of Samaritan origin, and the first mosaic inscription in the Samaritan script. Professor E. L. Sukenik of the Hebrew University is soon to begin excavating the synagogue.

An early Roman rock-cut tomb was accidentally discovered at NATHANYA on the seashore 28 km. north of Tel-Aviv and was excavated by the Department. It was apparently a family vault, consisting of a large hall with loculi in three of its walls. The dead were buried in wooden coffins, of which the only remains are iron nails, bronze handles, and handle-plates shaped like lions' heads. Women were buried with bronze fibulae and toilet articles, men with their strigils and oil-flasks. Finds of glass, pottery, and lamps allow the tomb to be dated fairly accurately to the first half of the first century A.D. The absence of valuable objects and the disordered state of the burials indicate that the tomb was robbed in antiquity.

A late Roman rock-cut tomb was discovered in the course of sewage works at TIV'ON fifteen kilometers southeast of Haifa and was cleared by the Department. It consisted of an open court and four chambers arranged in two rows; loculi and recesses were cut in the rock walls of the chambers. The loculi contained clay coffins with covers of roof-tiles and "riders." One coffin was sealed and intact.

An attempt at a prison-break under the mandatory regime in 1947 led to the discovery of a series of lofty vaulted halls under the fortress of ACRE which seem to belong to the castle of the Crusader Knights Hospitallers of St. Jeanne d'Arc. The halls, including a refectory, were found filled up to three meters with earth and debris. The Department is planning further investigation as soon as circumstances allow. The Department has also started an exploratory excavation

in the old tell of JAFFA (el-Qal'ah), where so far a large trial pit has revealed an early Arab layer, below which remains of a Roman stratum are emerging. Work is also being undertaken on the clearing and restoration of the old citadel of Tiberias, in one room of which it is planned to house a small local museum.

An unusually heavy and protracted rainy season which started early in December, 1948 and ended only in the first week of May, 1949 prevented field activity during those months. Yet a large number of small and accidental finds was reported by friends and "trustees," both civil and military. Among these should be mentioned an extensive Iron Age and Roman (?) cemetery in a sandy hillock outside SUMMEYRIYYEH, ca. six kilometers north of Acre. In the same neighborhood Dr. M. Stekelis excavated for the Department an open-air station of the Acheulean period, uncovering a large number of flint implements and fossilized bones, including those of an extinct species of elephant. Other newly reported stations and loci of finds are: (a) Paleolithic: MA'YAN BAR near Lake Huleh and BESETH (el-Basrah) in northwest Galilee; (b) Mesolithic: HEFSI-BAH near Hadera in the central Sharon; (c) Chalcolithic: APHIKIM in the Jordan valley south of Lake Genezareth, RAS EN-NAQURAH on the northwest frontier, and AKHSIB (es-Zib); (d) undated: BETH-HAKKEREM in western Galilee, MIKHMORETH near Hadera, and REVIVIM near Aslûj in the Negeb.

A collection of stamped Rhodian jar-handles recently picked up at TELL EL-MASTABAH just north of Beth She'an is now housed in the regional museum at Tell-Joseph-Ein Harod. BETH SHE'AN also yielded a new Latin funerary inscription: *Hygia so/ro/ri b(ene) m(e)r(enti)/ sit tibi ter/ra levis*.

The blasting of foundations for a reservoir at MA'ALEH HAKHAMISHAH, some fourteen kilometers northwest of Jerusalem led to the discovery of a burial belonging to the "Hyksos" period (Middle Bronze II), which was excavated and studied by Dr. I. Ben-Dor, Deputy Director of the Department. Accidental discoveries also include late Roman installations for the extraction of olive oil at 'UMM KHALED, about one kilometer east of Netaniyyah, and RAMAT-GAN, two kilometers northeast of Tel-Aviv. Both possess mosaic pavements. The Local Council of Ramat-

Gan very kindly made it possible for Mr. J. Kaplan to investigate these remains (partly destroyed before their existence had been reported) on behalf of the Department. He also investigated a nearby group of tombs of the fourth and fifth centuries A.D., which cluster around a large socle cut out of the rock. This socle must have supported a built funerary monument that has now entirely disappeared, not unlike those known in Jerusalem (first century A.D.) or those whose traces were discovered by the Jewish Palestine Exploration Society at Beth She'arim in the course of their excavations in 1940 (third century A.D.). The burials at Ramat-Gan were all disturbed and practically nothing was found in the tombs, which were of both the loculi and arcossolia types. Mr. Kaplan also uncovered the remains of a Christian chapel containing a multi-colored mosaic floor and an apsis in its east wall near the railway line some four kilometers south of the RAS EL-'EIN station. Nearby remains of a small rectangular fort (Byzantine?) can be seen in recent fortification trenches; this was probably a small watchtower on the Roman Antipatris-Lyddah highway, which passed in the vicinity.

Surface exploration in the ruins of HIPPOS (Susitha) conducted by members of the neighboring collective settlement of 'Ein-Gev under the guidance of Mrs. Ruth 'Amiran, Inspector of Antiquities in the northern area, permitted the identification of several streets visible in an aerial photograph of the town, and revealed the existence of a tunnel passing through the southern town wall with its small entrance concealed near the outside foundations of the wall, the basalt paving of the *cardo*, some mosaic floors, and some new facts about a church.

Fishermen from SEDOTH-YAM fishing some four kilometers off the coast of Caesarea dragged up from the bottom of the sea at a depth of about 35 fathoms four whole amphorae encrusted with seashells—two Persian, one Hellenistic, and one Byzantine. (See pl. xv, D for two specimens.) These may have been washed down from the shore by strong waves, but the possibility of their being parts of the cargoes of vessels that sank off the port is not excluded.

Dr. B. Maisler excavated a small tell on the northern bank of the Yarqon (el-'Auja) River within the municipal area of TEL-AVIV on behalf of the Jewish Palestine Exploration Society and

the Tel-Aviv Museum of Art. During the first season (autumn, 1948) a fairly large area was uncovered, revealing six strata: Israelite (Iron Age), Persian, Herodian, Roman, Byzantine, and early Arab. The Israelite stratum is well represented by six occupation levels dating from the eleventh to the seventh centuries B.C. The second season (summer, 1949) had just started at the time of writing. Dr. Maisler also undertook a short exploratory survey in southeast Israel, in the course of which he found: (a) Iron Age sherds at 'EIN-HUŠB, testifying to the Israelite and Judean occupation of the place, besides remains of later periods already reported by Glueck and others; (b) indication that TELL-JURN near the spring of 'Ein-Gedy is a natural hillock terraced for cultivation, and that the neighborhood showed no traces of a permanent settlement.

The Department co-operated with the Ministry of Religions, Department for Moslem Affairs, in a survey of Moslem monuments. The Commission consisted of Dr. W. J. Hirshberg, Director of the Department for Moslem Affairs, Professor L. A. Mayer, Professor of Moslem Archaeology at the Hebrew University, and Mr. J. Pinkerfeld, Conservator of Monuments of the Department of Antiquities. A large number of monuments was surveyed, photographed, and described, and conservation work was undertaken on a Mameluk mausoleum at SAFED. Mr. J. Kaplan on behalf of the Department carried out an exploratory excavation at the ruined White Mosque at RAMLEH. It was found that the subterranean chambers were definitely water storage cisterns; a ramified system of feeding channels controlled by stone sluices was unearthed together with a third (eastern) series of cisterns in addition to the western and southern ones previously known. The main gate of the mosque on the east was cleared, foundations of porticoes on the north and west were uncovered, together with a paved and stepped porch on the north. Remains of an older building, apparently belonging to the Ummaiyad period, underlie the present remains.

Père R. de Vaux reports that there were no excavations at TELL EL-FAR'AH in 1948/9, but that it is hoped that work at this most important site will be continued in 1950.

Professor O. R. Sellers tells us of a small excavation under the joint auspices of McCormick Theological Seminary of Chicago and the Ameri-

can School of Oriental Research in Jerusalem at SILET EDH-DHAHR between Nablus and Jenin about five kilometers north of Samaria. The excavation, which was conducted by Professor Sellers and Mr. D. C. Baramki, lasted from June 6-20, 1949. It was in a cave called Mugharet Abn Hilimeh, roughly semicircular in shape, with a diameter of 8.7 meters. The cave had once been used for grain storage, for seven silos were cut into the rock floor. Later these were cut through in the construction of three burial chambers with ten *kokim* each, which penetrated below the cave floor and extended beyond its circumference. The burials appear to have been entirely Christian and date from the fourth to the sixth centuries A.D. The principal find was 300 lamps of Roman and Byzantine date; there was also a bust-statue similar to those known from Palmyra and a small bronze seal-ring with a design of a horseman carrying a cross and wearing a halo—probably St. George.

This excavation was the first to receive a permit from the government of Transjordan, under whose auspices a department of antiquities is being organized in Arab Palestine.

Dr. Sellers has kindly given a few notes on damage suffered by archaeological monuments during the recent fighting. In the American School of Oriental Research a case containing flints was slightly damaged and one containing pottery badly damaged; fortunately the latter had only common types, so nothing irreplaceable is lost. The Dome of the Rock was struck by several mortar bombs and some of the beautiful windows were badly broken. The Church of the Holy Sepulcher suffered slight damage, and practically all of the convents and mosques in the Old City received some hits.

SYRIA AND LEBANON

MRS. DOROTHY MACKAY, curator of the Museum of Archaeology of the American University of BEYROUTH, reports that re-arrangement of the collections using various modern exhibition techniques is now going on, and that study collections are being set apart from materials used for public exhibition. The Museum was opened for the meeting of UNESCO in November, 1948, but much labelling and other work on the material remains to be done. It is hoped that a guide to the Museum will be published next year.

A museum staff member found two small pots, one a stirrup-vessel of Late Helladic III, in a cave near the mouth of the DOG RIVER; the Museum, with the collaboration of the Directorate of Antiquities of the Lebanese Government, had a brief campaign of excavation there and expects to publish the finds soon. The lower portion of the deposits belonging to the Stone Age was left untouched; the upper part consisted of black earth and contained two levels, one representing an occupation which seems to be of Early and Middle Bronze date, and the other yielding burials which were apparently Early Iron Age.

Professor Claude Schaeffer had his twelfth season of excavation at RAS SHAMRA in 1948 and expects to continue the work in 1949. The great palace was definitely located, and in one of its wings the rooms in which the diplomatic and administrative records had been stored was excavated. These rooms lay near the palace entrance and were approached through an antechamber whose doorway was flanked by two large stone bases which must have supported wooden columns; stone benches were placed on both sides of the antechamber. A number of cuneiform tablets in the alphabetic Ugaritic script and in Babylonian have been found, and all over the building were great numbers of weapons belonging to the archers which earlier finds have identified as special palace guards. Two enormous vaulted tombs, possibly belonging to the royal family, were also found.

TURKEY

PROFESSOR TAHSIN ÖZGÜÇ of the University of ANKARA tells us of the excavations of the Turkish Historical Society in the "Karum" or trading-center of KANES (Kültepe), the area in which Assyrian merchants had a colony in the early second millennium B.C. The expedition, headed by Professor Özgüç and staffed by Dr. Nimet Özgüç and Mahmut Akok, began work in 1948 and continued this year. The mound containing the remains of the Karum is 800 meters long, 350-400 meters wide, and stands some 2-2.50 meters above plain level; with the exception of a small excavation conducted 24 years ago by Bedrich Hrozný, it was untouched up to the time of the present expedition. It is a complete and self-contained little colony within the large Anatolian city of Kanis, with market-

places, storage buildings, dwellings, etc., as well as the Bit-Karim or townhall which formed the center of the colony.

Three areas of the mound were excavated, and the digging yielded numerous buildings, small objects, and—probably most important—over 1500 clay tablets and envelopes with cylinder seal impressions. The eight meters of debris of which the mound consisted contained four building levels. The uppermost is distinguished by large buildings on heavy foundations; technique and plans alike indicate that these are the prototypes of the monumental buildings of the New Hittite Empire, ca. 1400–1200 B.C. No cuneiform tablets were found in this level, and attribution to it of some isolated tablets found in the debris is dubious. The pottery exhibits no differences from that of the older levels.

The second level was ended by a great fire. The walls still stand to a height of 2–2.50 meters above the floors; the foundations are of stone and the walls of mudbricks which were laid with a horizontal and vertical framework of wood (pl. xv, A, B, and C). The houses, containing two to four rooms with a central court, fell victim to a fire which apparently broke out suddenly, and the startled inhabitants in their flight were forced to leave all their property behind. Hence the archives and other objects used by the merchants were found *in situ* in great numbers. To judge from the contents of the buildings they represented the storehouses and also the dwellings of the Assyrian merchants; the inhabitants, both male and female, were often buried under the floors. The archives of Uzua, Laqipum, and three other merchants were found in this second level, along with literary texts whose appearance adds considerably to our knowledge of the merchant colony. Here too were found tablets with references to the Assyrian king Erišum, who reigned some 150 years before Hammurabi. Extremely important is a 70-line tablet of this king, the longest inscription known of an Assyrian king of this period.

The third level (pl. xv, E) had likewise been burned. Its buildings do not differ significantly in plan from those of level II; however, those of the third level are distinguished by the very high technical level of their stone-working. In this stratum also nothing seems to have been saved from the fire; numbers of small objects were

found *in situ*, including cuneiform tablets, 600 of which were brought to light in a single small room. This is the level in which were found the records of the great Assyrian merchant Adad-zululi.

The fourth level, founded on virgin soil at a depth of 8.40 meters below the surface, ran its course without any catastrophe. As was the case in level I, this stratum yielded no tablets, but also used "Hittite" pottery.

The dead were buried in various ways—in simple inhumations under the floors of the dwellings, in pots, or in stone cists. The fact that the bodies may be contracted (sometimes in pairs) or extended, and that furthermore in two instances there are traces of purification ceremonies by fire, indicates the mingling of different customs. The funerary gifts of pottery, bronze, gold, silver, lead, electrum, and bone, which are especially rich in level II, are unequalled at this time anywhere in central Anatolia.

The pottery used in the time of the Assyrian colony (pl. xvi, A, B, C, and E) is prevailingly monochrome and technically superior to that of any succeeding phase of Hittite culture. Some forms which are used at this time continue in the period of the Hittite Empires even down to the end of the New Empire, but others disappeared after the time of the colonists, while certain forms of the Empires period were unknown in the Karum at Kanes; these distinctions will be most helpful in the exact dating of Hittite pottery from ca. 2000–1200 B.C. The Kanes excavations have taught us that the polychrome painted wheel-made Hittite pottery is unique, differing from the wares of both the preceding and succeeding periods (pl. xvi, D and F). The handmade polychrome vessels of the type known in Alishar III occur here in very small numbers, the majority in level IV; while the special circumstances of the Karum did not yield evidence as to the historical position of this pottery, it is wholly possible that such information may be obtained in the main city mound. Three painted vases are imports from North Syria or Cilicia; it is interesting to note that, with the exception of these and the cuneiform tablets with seal impressions, there is no archaeological indication of foreign origin in the material.

Among the many seal impressions found (e.g. pl. xvii, A) are both examples similar to those

already known and new types; this not only allows further organization of the material already known, but provides new material for the elucidation of the representational art of the period. Assyrian and indigenous styles are predominant, but along with them appear patterns of the Ur III style with alterations and additions, as well as Syrianizing and Old Babylonian styles. Especially in the seals believed to be indigenous Anatolian new types of deities are to be found as well as prototypes of the Hittite deities. The seal impressions of levels III and II show no stylistic development.

Aside from the seals the best products of the representational art of the period are a bull rhyton, a cosmetic box with bulls' heads in the round and a lion in semi-relief,² and a mold of a deity with pointed cap and dagger standing on two animals. All of these objects are of inestimable value since they show us the beginnings of Hittite art and teach us what were the precursors of that art and how they developed into the latter.

The metal objects include personal ornaments, vessels, and weapons; they are found in both houses and graves and give us much important information. It is hoped that large masses of metal may be found which can be studied in the light of the written records.

The Turkish Historical Society has decided to restore the Karum in its entirety.

AZIZ OGAN, Director of the National Museum of ISTANBUL, sent a note on a recent find. In September, 1948, while levelling the earth in the courtyard of the Faculty of Science of the University of Istanbul a marble sarcophagus of the Roman period was discovered. It was closed with iron cramps and had not been opened since burial. The cover was lifted in the presence of Museum officials and Dr. Thomas Whittemore. Inside the sarcophagus were twelve centimeters of water, in which the decayed bones were almost a paste. Some fine gold thread probably was part of a woven garment; there were no coins and no pottery. The dimensions are: height, 0.86 m.; length, 2.13 m.; width, 1.13 m. On the long side is a funeral relief with a male figure reclining on a couch and a female figure seated in a chair. From the inscription above we know that the

sarcophagus contained the remains of Epiktetos, son of Moschos, and of his daughter Zosime. The workmanship is of the third century A.D. This is the third sarcophagus discovered while building annexes to the University of Istanbul; the total number of objects so found is about one hundred and includes numerous stelae. A report will be published shortly, and the Museum of Antiquities of Istanbul is planning to open a new room in which to exhibit these finds.

SIR LEONARD WOOLLEY has reported on his 1948 season at TELL ATCHANA (Alalakh) and its environs. It was hoped that the excavation of the curious complex of underground structures which had been provisionally called a "royal tomb"³ could be completed; this unfortunately could not be done, but the discoveries made in the course of the work were important. A considerable area at ground level had to be cleared in an attempt to fix the extent of the great brick-filled pit in which the underground buildings lie. This led to the discovery that what had been assumed to be a royal chapel attached to the eighteenth century palace of King Yarim-Lim was in truth a separate, though adjoining, building consisting of a sanctuary and entrance-chamber with a large forecourt surrounded by service rooms. Judging from its size and position, it was probably the main temple of the city of Alalakh; its site continued to be used for a temple until the close of the city's history and had probably been that of a temple long before Yarim-Lim put up his building. Naturally this discovery compelled a modification of previous views; it did not mean that there could be no royal tomb but that such a tomb, if it existed, would be an appendage of the more important temple, and the underground buildings in the pit must be interpreted in relation to the temple, not to the tomb. In one case the connection became clear. The sanctuary was two stories high; in the upper room there had been some kind of receptacle from which a pipe or drain led down through the thickness of the northwest wall of the building. The importance of this drain was shown by the fact that it was constructed of specially made baked bricks, forming a massive pier masked by the mudbricks of the wall proper. The drain went down to the mudbrick filling of the great pit, which at this point

² *ILN*, Dec. 18, 1948, p. 703, fig. 16.

³ See *AJA*, li (1947), pp. 427-428.

was interrupted by a square hole filled with broken brick rubble, at the bottom of which was a clay-lined basin discolored by an organic deposit; on the southeast side of the basin was a spout allowing any liquid to percolate down just clear of the ledge of the pit's side into the deepest part of the pit, where was the boulder-filled well reaching below the water level of the eighteenth century B.C. Obviously the intention here was that libations might be poured in the upper chamber of the sanctuary and should pass directly to the gods whose home was below "the waters that are under the earth." That is a Sumerian and Babylonian conception, the *abzu* of the cuneiform documents; it seems to have been adopted by Yarim-Lim (no older temple possessing any such feature), perhaps out of respect for his friend Hammurabi. The successive buildings erected in the pit during its filling should probably also be explained in the light of cuneiform texts, although no Mesopotamian building has been found to illustrate the ritual observed by Yarim-Lim.⁴

The tracing of the outlines of the great pit produced well stratified masses of broken pottery, apparently "throw-outs" from the earlier temples, which for the first time gave adequate material for establishing the character of the ceramics of levels VIII, IX, and X, and served also to fix the date of the earth ramparts of the citadel.

It was decided to do further work at TELL ESH-SHEIKH, a little mound about two miles distant from Atchana on the other side of the Orontes.⁵ In 1947 the character of the mound had been tested by digging in the village rubbish-dumps, where pottery was bound to be abundant; the resulting collection of Chalcolithic potsherds, etc. had been so interesting that Sir Leonard was anxious to obtain stratified material and therefore planned a small dig in the better quarter of the settlement. The conduct of the work was entrusted to Ahmet Dönmez, seconded by Baki Ögün, by whom the results will be published in the *Bulleten* of the Turkish Historical Society; Mr.

M. S. F. Hood also assisted when not required at Atchana.

Twelve levels, each defined by buildings and floors, were recorded, and below them was virgin soil. In the lowest level the pottery was predominantly a plain black ware, perhaps the descendant of the local Neolithic. Very early there were imported examples of Tell Halaf and "Northern al-'Ubaid" painted wares, and their technique and many of their motifs were taken over by the local potters, who produced a very richly decorated ware which persisted throughout all the upper levels (Fig. 1). This "Tell esh-Skeikh pottery" as it can fairly be called, seeing that nothing of the sort has yet been published as coming from other sites, was undoubtedly the characteristic ware of the Amuq plain in the Chalcolithic period and must have been developed in the plain itself or close by. From the Amuq it spread westward; the Chalcolithic painted pottery found by Garstang at Mersin is a version of the same ware, but a provincial version far inferior to the original.

About half-way up the mound steatite or bone stamp seals, usually of gable form, began to appear; the earlier examples bore simple geometric designs, but in the upper levels well designed animal motifs and even human figures appeared, the group constituting a series of prime importance for the history of glyptic art. Two steatite rams' heads carved in the round seem to be unique examples of Chalcolithic art; perhaps they were amulets or were intended to be attached to bodies of a different material. They contrast strangely with the crude clay figurines found in the same levels.

A final season's work at Atchana is planned for September, 1949.

IRAN

DR. R. GHIRSHMAN has sent a statement on his recent work at SUSA. Four areas were investigated in the winter of 1948/9. Since the Apadana of the Achaemenid palace had been completely excavated in the two preceding winters, the work of the current season in this area was concerned with the palace itself, whose northwest foundations were entirely cleared. The large area opened three years ago in the "Ville Royale," whose purpose was to establish the stratigraphy of the site, was investigated further; the third

⁴ But cf. the Nabonidus temple at Ur, *Antiquaries Journal*, x (1930), pp. 319 ff.; and xi (1931), p. 374.

⁵ It is not marked on Braidwood's survey, *Mounds in the Plain of Antioch*; being less than two meters high it not unnaturally escaped notice.



FIG. 1. CHALCOLITHIC POTTERY, TELL ESH-SHEIKH, TURKEY.

city, dating from the Arab-Sasanian period, was cleared and furnished an abundance of pottery, both plain and glazed, coins, and a Sasanian bulla bearing the impression of five official seals.

The exploration of the great cemetery on the "Ville des Artisans" was also continued. This year attention was centered on the tombs dug into virgin soil, whose existence under some ten meters of later debris could not be marked last year. The earliest tombs, going back perhaps to the end of the fourth century or the beginning of the third century B.C., had the form of horizontal galleries which penetrated the little natural hill-ocks and ended in funerary chambers. In each chamber was a pottery coffin with cover and funerary furnishings consisting of alabaster, glazed pottery, and sometimes Greek jars bearing on their handles the impressions of Greek seals. Of later date are the pit tombs, and others which are veritable hypogaea with vaults half constructed in baked brick and half dug into the soil; from each of these vaults a long stairway descends deep down in virgin soil, and several stages of funerary chambers open to right and left of it.

The fourth sector was opened in order to look for the latest tombs, and revealed changes in the mode of inhumation which took place, it seems, in the course of the first or second centuries A.D. Parthian pottery was abundant in these tombs, which likewise furnished jewelry, toilet articles, and a rich collection of Parthian glass.

At the end of the campaign at Susa Dr. Ghirshman explored a prehistoric cave in the Bakhtiari Mountains opening on the defile called Tang-i-Pabda east of the city of SHUSHTAR. Thirteen successive floors with the remains of hearths were cut through before attaining virgin soil at a depth of 3.5 meters. Numerous stone coups-de-poing, chisels, and hatchets scarcely retouched by man illustrate the civilization of this place, which seems to go far back in the Neolithic, but which also produced a very rough pottery. This work constituted the first investigation in the caves of Iran, and it is hoped that it can be pursued until the relation between the culture of the cave men and that already known to us in which men began to make their settlements on the plains can be established.

In the summer of 1948 T. BURTON-BROWN, accompanied by M. Cambyse of the Iranian

Antiquities Service, excavated at GEOY TEPE just southeast of Rezaiyyeh in Azerbaijan. The main shaft, ten meters square at the top, was dug down 44 feet below the center of the mound, while other shafts were sunk near the edge of the tell. A good sequence of material dated by the excavator from the Ubaid period to the beginning of the Iron Age was obtained.

The Ubaid level contained large houses with long storerooms, in one of which was found a row of six Luff-ware pithoi whose collars were decorated with a row of dark triangles. Many saucers and several small jars of buff or red ware, the latter sometimes painted with black, were found. Two interesting features were the existence of very large baked bricks and two seal impressions, one of a stamp depicting a deer and its young.

The next stratum was characterized by gray polished pottery; pl. xvii, c shows a pithos of this ware with relief decoration which included a fairly naturalistic stag and spirals. Discs of the same ware used as lids bore incised designs or cylinder seal impressions. It is noticeable that this level contained no pottery of the type known in the Gurgan area, at Damghan, or Shah Tepe. Among objects other than pottery were round and pyramidal gaming pieces and animal models.

The rather thick stratum above contained gray and black polished pottery, approximately hemispherical bowls being the most common form; often the rims were a pale silver-gray, and the line of greatest diameter bore alternately circular depressions and diagonal ridges or incisions. The bi-colored pieces are not known elsewhere, but plain black pottery said to be very similar to pottery from Troy I and other Aegean sites and light-colored vessels occurred sporadically. At the top of this stratum were two racquet pins of copper or bronze similar in shape to gold racquet pins from the Royal Cemetery at Ur.

Above this was a relatively barren area, and what pottery it contained was of very poor quality. Then came remains of a culture attributed to a new people, who built immense fortifications and manufactured a kind of polychrome pottery; large quantities of the latter were obtained, and the excavator believes it to be connected with that of Susa II and Alishar III. The decoration was usually geometric (e.g. pl. xvii, d) but representations of stags and birds also occur; colors are almost always red and black on a light ground.

A cemetery of this date was found, which yielded six skulls said to be fine specimens of the Nordic race. Other objects included a quantity of bead necklaces, obsidian arrowheads, bronzes, and some pieces of iron ore.

The following stratum contained plain red or black polished pottery. Shapes include "teapot" jars with beak-spouts and tall cups with high collars, said to be analogous to pottery of Siyalk A and Giyan I. Again bronzes and bead necklaces occurred. The final period of prehistoric occupation yielded plain red or gray pottery characterized by elaborate handles—knobbed, rope-like, or animal shaped—and incised decoration made by a very blunt tool. Parallels with pottery from Cyprus and the Aegean in the Late Bronze and Early Iron Ages are mentioned. The stone animals and reliefs (e.g. pl. xvii, B) may also belong to this period.

This material is now in the Ashmolean Museum, Oxford, for study; and publication is expected in a few months.

AFGHANISTAN

DR. D. SCHLUMBERGER has sent reports on the 1948/9 work of the Délégation Archéologique Française en Afghanistan.

On a hilltop near KAMA DACCA, a village on the Kabul River not far from the Khyber Pass, some chance finds had been made by tribesmen late in 1947. The Délégation excavated the site in March and April, 1948, and found the remains of a Buddhist monastery very similar to those around Taxila. The buildings showed signs of having been destroyed by violence, perhaps at the hands of the White Huns in the fifth century; of the dilapidated decoration only a small set of sculptures was recovered, consisting mainly of architectural fragments in stone and stucco and stucco heads in the Hadda style.

A survey around BALKH (Bactra) in the hope of locating some pre-Islamic surface remains proved fruitless, but some sixty mounds with what appeared to be thick Islamic layers were noted. At MIR ZAKAH, where the great hoard of coins had been found in 1947,⁶ the Délégation cleared part of the site and found some 450 more coins. An inventory of these and description of

the excavations at Mir Zakah and Kama Dacca is being prepared for publication.

A number of well preserved and apparently important buildings had been discovered at LASHKARI BAZAR a few miles north of the ruined city of Qala'-i-Bist at the confluence of the Hilmand and Arghandāb rivers,⁷ and the spring campaign of 1949 was devoted to their exploration. Lashkari Bazar was, as had been suspected, a residence of the Ghaznavid sultans Mahmūd and Mas'ūd I (first half of the eleventh century A.D.); this is the "castle at the Dasht-i-Lōkan"⁸ well known to contemporary historians (Baihaqi) and poets (Farrūkhi, 'Unsuri). Work was carried out in the main palace (pl. xvii, E and F show the façade and some sculptured decoration), of which a plan was made and some rooms cleared. The dig yielded interesting samples of pottery and remains of both sculptured and painted decoration, the latter mostly "arabesque" designs, although representational designs were also found. Further excavations are contemplated.

CAUCASUS AND CENTRAL ASIA

DR. HENRY FIELD, assisted by Mrs. KATHLEEN PRICE, has sent considerable information about the year's discoveries in the U.S.S.R., from which we have abstracted the following remarks.

S. P. TOLSTOV, Director of the Ethnographical Institute of the Academy of Sciences of the U.S.S.R., has been in charge of a series of expeditions in UZBEKISTAN; during the past season one such expedition excavated in the fortified castle of TOPRAK-KALA in the Shabbas region of the Kara-Kalpak A.S.S.R.⁹ and made a reconnaissance survey of the Sarykamysch lowlands and the upper and central valley of the Uzboy River.

During two months' work at TOPRAK-KALA about 4000 square meters and more than seventy apartments situated in three stories of the building were uncovered. Abundant and varied material was excavated, revealing the diversity of the

⁷ See D. Schlumberger in *Actes du XXIe Congrès des Orientalistes*.

⁸ Rather than Chōkan; see A. U. Pope, *Survey of Persian Art*, II, pp. 978-979.

⁹ See *AJA*, li (1947), p. 202, and liii (1949), pp. 55-56.

⁶ *AJA*, liii (1949), p. 55.

customs of the Khwarazmians of the third century A.D. Seeds and stones of many cultivated plants were found, including millet, barley, wheat, grapes, muskmelons, peaches, and apricots; there were also bones of domestic animals (goats, sheep, pigs, cows, horses, and camels) and wild deer. In addition the excavators found dining and cooking utensils, fragments of wool, cotton, and silk, leather footwear, mats, cords, bronze nails, belt insets of bronze and colored glass, pieces of colored carpets and tapestry, many wooden articles, and decorated reed arrowshafts, many of which had triangular iron heads. Inscriptions on wood, parchment, paper, and leather were found, including one complete text. The majority are in ancient Khwarazmian characters, reminiscent of the script on the coins and preserving the traditions of the earliest Aramaic alphabet, but the calligraphy of one text is so different that it may represent another language. Several copper coins of the late Kushan and early Khwarazmian periods were found, which date the entire complex from the very end of the third century to the beginning of the fourth century A.D.

By far the most important finds were the paintings and sculptures. Paintings were found in more than half of the buildings. Ornamental panels from 0.50–0.75 meters wide were preserved on the lower parts of some walls; an especially effective panel in an apartment of the western tower of the palace has waves outlined in a dark color on a blue background in which red and white fish are swimming. The waves are drawn in a free and dynamic way, and the play of a twisting spiral gives an impression of life-like movement. Over this panel is a composition with human figures, animals, bunches of grapes, and leaves on a black and red background. Brilliant material was found in the adjoining room, where men and horses surrounded by a framework of vegetable ornament were painted on a scarlet background above a dove-colored panel on which black fish-scales were drawn. The scarlet background was prevalent also in the northern corners of the rooms of the same tower, evidently done by the same painter. Three fragmentary sketches of tigers were found, as well as four paintings of horses, a gray-lilac pheasant on a red background, and a number of fragmentary representations of human beings (two profiles,

the upper part of a head, half a face, eyes, a shin, and hands holding the finger-board of a two-stringed musical instrument). In the central court was a composition which included the relatively well preserved figure of a standing woman in white clothing and a man in a black *kaftan*.

These discoveries have added greatly to our knowledge of the style of the ancient paintings of Khwarazm. As is shown by an analysis of a mass of material, the influence of the Indo-Buddhist artistic school so unmistakable in the figure of the harpist discovered in 1946¹⁰ is much more restricted than might have been expected. Probably the only newly found drawing influenced by this style is the bust of a woman in white and ochre tones discovered in one of the rooms of the south tower. The remaining mass of paintings is similar in style to those discovered in 1946, such as the representation of the women fruit-pickers, and is characterized by extreme originality, permitting one to speak of the existence of a completely independent Khwarazmian artistic center, which must be granted a special place among those of the Mediterranean and southwestern Asia. This school is exceptionally rich in its use of color. Here can be seen many shades of red, raspberry, rose, dark blue, azure, green, orange, yellow, violet, white, black, and gray. The combinations of colors show both daring and variety; the pictures are painted on a scarlet, dark blue, black, or white ground which presents a striking contrast to the figures. Particularly excellent are a hunting scene in lilac-gray and yellow-ochre tones on a vivid scarlet ground, a white and red vegetable design, and a human figure on a black ground. The work is also remarkable for its great freedom and the original, concise manner in which the subject is brought into relief with strokes of color. Especially good is a representation of a human body in the "red room" of the west tower, in which the figure is painted with light green touches on a yellowish surface. Also well rendered is a representation of a woman, where the artist conveys the relief of her prominent chin by means of sure strokes of red on a pink ground.

A completely new type of art was revealed by the discovery of some monumental sculptures in

¹⁰ See *AJA*, li (1947), p. 202.

unfired clay. Complete human statues were found in nine rooms, and there were also thirty fragments. A large fragment of a life-size horseman in relief, an excellent portrayal of a dark bay horse, and a horse with its saddle-girth and the folds of its rider's cloak richly ornamented were of special interest. Most of these statues were life-size and bore traces of paint, the faces flesh-color and the clothes various shades of green, rose, azure, red, or black. The many-colored ornaments on the clothing obviously represent embroidery. The faces of the statues, which are clearly portraits, are executed with exceptional realism and do not yield place in delicacy of workmanship to the best examples of sculpture at any other center of late Hellenic art. In the rendering of the figures and the folds of the drapery the same mature artistry is evident as in the representation of the faces.

Most of the sculpture was concentrated in the so-called "sculpture hall," a spacious apartment (30 X 14 meters) at the northeast part of the court, along the walls of which was a series of niches divided by transverse openwork partitions of figured bricks; in each niche was a group of statues. In two niches are preserved, evidently in their original location, two seated masculine figures twice life-size, around which are standing men, women, and children in groups of from three to five. The walls behind the seated statues were decorated with paintings. The finding of two headdresses has made it possible to determine the subject of these sculptured groups, for the headdresses prove to be identical with the individual crowns of two Khwarazmian emperors of the third century A.D. known from representations on the coins. Especially interesting is a heavy sculptured crown in the form of a white eagle, known to us from much earlier coins of the third century A.D. which were minted at the time when Vazamar, the Khwarazmian emperor, freed his country from its dependency on the Kushans. Thus there seems no doubt that this was the portrait gallery of the dynasty of the Khwarazmian Siavushids, which includes the rulers of the third century. Evidently the huge seated figures are the emperors, and those surrounding them are members of their families and possibly protective deities. This discovery indicates that Toprak-kala was the palace, not of local princes, but of the shahs of all Khwarazm.

Furthermore it remained their residence, according to Al-Birun in 305 A.D., until the imperial residence was moved to the city of Kyat, now Shabbaz. This explains the enormous size of the palace, unequaled among all the monuments of ancient Khwarazm, and the previously inexplicable fact of its decay at the beginning of the fourth century A.D., although the city of Toprak-kala continued to flourish until the sixth century.

Tolstov has also excavated at ALTYN-ASAR *gorodishche*, which was located in 1946 and forms part of the Dzhety-Asar (Seven Mounds) beside the Kuvan-Darya in the northern part of the Kyzyl-Kum desert.¹¹ The mound has a diameter of 150 meters and a height of twelve meters. Work was begun on the southern flank, where nine buildings and many painted potsherds were found. An area of about 300 square meters was excavated to a depth of from one to four meters. There were two strata: (a) at a depth of 0.75-1 meter, attributed to the second and third centuries A.D.; (b) at about four meters, belonging to the first centuries B.C. The former was characterized by the existence of millstones, the latter by rubbing stones; in other features the two were similar.

About 100 rooms in the communal living quarters of the upper stratum (an estimated third of the original number) have been cleared; the plan shows narrow corridors radiating from the center. In the lower level a room with an area of thirty square meters was cleared. Against one wall stood a high brick seat carefully coated with clay, against another an altar-like structure with steps. On a third wall was a crude painting of circles and garlands in red against a white background framing a row of vaulted niches. This is the oldest wall painting in Central Asia. Traces of paintings were also found in another room which has not been completely excavated. This room had a flat ceiling resting on wooden columns surrounded with brick and stone courses.

Animal bones abounded, with long-horned cattle predominant; long bones of cattle, horses, and camels were used as binding material in the brick walls. Fish bones and an iron fishhook were found, but seeds and fruit stones were rare. Pottery vessels, all handmade, ranged from large

¹¹ See *AJA*, li (1947), p. 202.

jars to small graceful bowls. The predominant ware was polished black with angular ribbon ornamentation; cooking vessels bore thumb imprints on the edges. Among notable forms were light-colored goblets on tall stems ornamented with reliefs, and kettles with indented rims and vertical handles decorated with incision. In addition to the many local types there was a series of imitations of Hellenic jars and other forms unknown in Central Asia, indicating cultural contacts with the Black Sea region and the northern Caspian steppes. These unusual vessels were decorated in relief with rams' horns, snakes, and conical projections. Among other objects were bone pieces from a horse's bridle, bronze nails, iron fragments, glass and stone beads, and a bronze spoon with a handle terminating in a double spiral.

During the 1948 reconnaissance around Dzhetty-Asar eighteen complexes of kurgans were mapped. In one kurgan, twenty meters in diameter, the skeleton lay on a brick pavement within a square brick vault; near the edge of the mound were pottery vessels, apparently offerings to the dead. From the air another group of ten tumuli was located southwest of DZHALAGACH railroad station near the Kuvan-Darya. Tolstov and his assistants believe that these monuments belonged to the Syr-Daryan Tokhars, a people closely related to the Cimmerians of eastern Europe. They were the ancestors of the Scythians, and the people who developed the earliest cultures represented in the *gorodishches* of the Poltava, Kharkov, and Izum regions. The Cimmerian monuments of the Ukraine and the Tokharian of the Kuvan-Darya reveal cultural contacts with Caucasia and the Danube (Halstatt).

A more complete report of the excavations by B. B. PIOTROVSKII at KARMIR-BLUR¹² is now available. The Urartian palace-fortress complex, containing about 120 apartments, covered some 16,000 square meters; its retaining wall was 1500 meters long. All sections of the structure were not contemporaneous, and future work is expected to determine their chronological relationships. The western façade of the main building faces a large double-walled court with a

well-fortified gate at the south and a smaller gate with an entrance for chariots and a door for pedestrians at the northwest. The latter was built with impressive solidity of large unbaked bricks ($52 \times 35 \times 14$ centimeters) on a plinth of massive, roughly hewn stones about two meters high. The façade of the approximately rectangular building was broken by buttresses and massive corner towers. In some rooms the walls were preserved to a height of seven meters, and the excavators have estimated the original height to have exceeded ten meters. Some narrow rooms (24×4 meters) had flat roofs; two roofing methods, both of which have survived in modern Armenia, seem to have been employed. In the first type the ceiling consisted of hewn planks of pine, poplar, or oak; on top was placed a layer of reeds, one of twigs, a second layer of reeds, and finally stamped earth. The second method differs from the first only in that the planks were replaced by a network of transverse beams and lateral poles, across which was laid the lower layer of reeds.

The windows were constructed in the upper part of the walls just under the roof as depicted in Assyrian representations of Urartian buildings. Since the various sections of the palace were placed on different levels corresponding to the slope of the hill, the windows of the rooms of one terrace looked out over the roof of the rooms of another terrace. For the better lighting of the central rooms light wells were constructed.

In one of the largest rooms sesame oil cakes and residuum of sesame butter were found on the floor. In an adjoining room stood a tub of calcareous tufa with a stone trough for draining off waste liquid; this probably served to soak the sesame seed. Nearby was a large stone mortar with a huge pestle for husking the seed. The quantity of sesame oil cakes and the necessary utensils for making sesame oil attest to the large-scale economy of this Urartian administrative center. The other groups of excavated rooms were storerooms in which were grain supplies and metal objects. The floor of one was covered with about 20,000 liters of millet, and in one corner on the wooden flooring lay a group of bronze phials of Assyrian type, a pail with two sculptured bulls' heads, bracelets, belts, and other objects. In one of the vessels was a small gold earring of fine workmanship.

¹² See *AJA*, liii (1949), p. 55, where the name is written "Kamir-Blur."

The objects discovered indicate extensive trade relationships of the Van kingdom with other countries of the Near East. The stone beads, for example, indicated different centers of origin and resembled those found in eighth to sixth century B.C. tombs at Samthavro, Vornak, and Mingechaur. The majority were of carnelian, sardonyx, rock crystal, and steatite. The sardonyx beads were spheroid in shape, the carnelian cylindrical; the perforations were conical. An Assyrian origin for the sardonyx beads is suggested, since their material and manufacturing technique are identical with the necklace bearing the name of Adad-nirari found in 1895 by E. Resler during excavations at Khodzhalakh (Nagorny Karabakh). Further evidence of links with Assyria are eight typical Assyrian cylinder seals of stone and paste; they bear mythological representations, in two cases the struggles of gods with a snake or a goat, resembling seals from Dur-Sharrukin and Assur.

A carnelian scaraboid seal with the figure of a goat formed by drill-holes suggests relations with Asia Minor and the Mediterranean, as do gold earrings of a type known in comparatively large numbers from Cyprus, Rhodes, and southern Italy. A small paste pendant representing Sekhmet indicates contacts with Egypt. Scythian relations are attested by fragments of a bronze belt with representations of the "tree of life," a motif occurring on many bronze belts from Ani-pemza and Shirak in the Kars region and very similar in form to motifs on the Scythian golden dagger-sheaths from the Litog and Kelermes kurgans. Of special interest also is the find of a griffin head with ram's horns, an object of Scythian origin similar to those from kurgans at Kuban and those found near Kelermes and Smela.

Near the entrance to one of the storerooms was found part of a bronze bolt bearing the following cuneiform inscription: "Rusa, son of Argishta, the weapon building (arsenal or fortress) of the city Teishebaina." This laconic text confirms the dating of the excavated part of the palace in the middle of the seventh century B.C., and gives us the ancient Urartian name of the fortress, containing that of the god Teishba, god of war, thunder, and storm. A bronze statuette of this god with an iron flange, probably for attachment to the upper part of a standard, had been

found on Karmir-Blur previously. The figure wore a horned headdress, the attribute of deities, and held a battle-ax and a club.

Like every large administrative center of the ancient Near East, the fortress of Teishebaina had its archives. On the floor of a storeroom in the northern part of the palace three fragments of clay tablets with cuneiform characters were unearthed amid debris. The only Urartian cuneiform tablets previously known were two complete tablets and four fragments from Toprak-kala; the palaeography of the Karmir-Blur tablets is said to resemble closely that of the Toprak-kala series. One fragment is obviously part of an order for work; ciphers and the ideogram for "man" are preserved. Two other fragments contain a list of names of people, representing portions of legal documents with names of witnesses to acts of purchases or mortgages. On one there are traces of the impression of a cylinder seal with a cuneiform inscription, which includes the name of a certain Ishtaga, evidently a resident of Teishebaina.

A chance find revealed a small perforated bitumen seal with the representation of a deer and a man; remains of a thin cord were preserved in the clay, and the imprint of papyrus on the lower side indicates that a scroll was fastened to it. A bronze shield one meter in diameter with a two-line cuneiform inscription dedicating it to the god Khald by Argishta, son of Menua (second quarter of the eighth century B.C.) had been discovered earlier. It is similar to shields from Toprak-kala and differs from them only in the absence of representational design. In a storeroom near the outer wall were discovered iron daggers and an iron sword half a meter in length. Nearby lay a crushed helmet with a marginal inscription in cuneiform: "To the god Khald, the lord, [this helmet] Sardur, son of Argishta, dedicated for the sake of well-being"; above the inscription are two symbols, probably the trade-mark of the artist. The helmet is decorated with embossed representations. On the forepart are two rows of the "tree of life" motif; beside them are beardless gods wearing pointed helmets and bearded gods with huge wings. Both sets of figures are framed by snakes with canine heads. The parts of the helmet protecting the nape of the neck and the temples are decorated with two rows of Urartian war chariots

and horsemen; the soldiers wear helmets and carry round shields. Similar representations of horsemen and chariots were also found on a nearby bronze quiver. The helmet, shield, and quiver were probably brought to Teishebaina from Argishtikhnili after the original Urartian administrative center lost its importance.

Near the northeastern gate three meters of debris from the upper portions of the unbaked brick walls were removed. Here were found bronze arrowheads of Scythian type attributed to the seventh-sixth centuries B.C., which were completely different from the Urartian iron arrowheads excavated from the rest of the complex. It was furthermore established that these arrowheads had been bent by striking the walls, and one was embedded in a layer of clay which coated the stone socle of the outer wall. Thus it seems indicated that these arrowheads of Scythian type belonged to the enemy who destroyed the palace and city of Teishebaina. The enemy stormed the fortress through the side gates situated on the banks of the river Zanga (ancient Ildaruni). Beforehand the fortress was evidently bombarded with lighted arrows, and small dwellings in the court near the palace wall were burned. Their roofs of branches and twigs had fallen and sealed the contents of the buildings *in situ*.

In the excavation of these buildings a large number of vessels filled with well preserved grains of barley (*Hordeum vulgare* L.), wheat (*Triticum vulgare* Vill.), millet (*Setaria italica*), and other grains were discovered near the hearths, and large supplies of grain were also preserved in holes dug in the floors. Besides these were sesame (*Sesamum orientale* L.), chick-peas (*Cicer arietinum*), small beans (*Vicia faba*), lentils (*Ervum lens*), and a type of grape ("Voskekhat") widespread in modern times. The agricultural development revealed here coincides strikingly with that of the Assyrians.

Near the hearths of the buildings were found stone grain pounders, a mortar and pestles, iron tools and weapons, and often in the corners

heaps of small beads, cowrie shells, bronze ornaments and belt fragments. Shields braided of willow rods with conical bosses decorated with imitation cuneiform characters, swords, daggers, and other weapons were found. Since the thick layer of crumbled unbaked bricks formed a solid covering, wooden spoons and scoops, bast and baskets, and scraps of wool and linen cloth were preserved.

Charred bones of cattle, horses, and asses were found. Three horses had no harness, but a fourth had an iron bit, differing from the Urartian type found elsewhere in the city and similar to that used by the Scythians. Among the horse bones were found bronze buckles in the form of a bird's beak (also with Scythian parallels) and some with a shape called a trifoliate swastika. The horses are said to be of a well known species; they are small (height of forelock 1.255 meters) and shorter than the Scythian horses from the kurgan burials in the southern U.S.S.R. The cattle were also small. The bones of the asses, however, differed in no way from bones of contemporary aboriginal species widespread in Transcaucasia.

In one of the burned dwellings a bunch of grasses, cornflowers, and oats was found; the appearance of these is believed to date the fall of the fortress to the first days of August. The buildings in the façade of the fortress had supplies only of fresh grain, but the palace store-rooms were not yet full and contained supplies of previously harvested grain among which were traces of damage by weevils.

The living quarters in the southwest façade of the palace had been looted. Here were discovered remains of skeletons—a child and also parts of the extremities and skull of an adult man crushed by a fallen wall. Traces of a great fire were observed throughout the excavation, and in the section connected with the production of sesame oil the fire reached such intensity that the unbaked bricks of the walls and the pottery vessels are said to have been melted.

NECROLOGY

STEPHEN B. LUCE, *Editor-in-Charge*

WALTER MILLER.—On July 28, 1949, Walter Miller, one of the leading Hellenists in America, died at his home in Columbia, Mo., at the age of eighty-five. He was born in Ashland County, Ohio, on May 5, 1864, and at the age of twenty received his A.M. from the University of Michigan. Then followed two years of study in Europe—at the University of Leipzig, 1884–1885, and at the American School of Classical Studies at Athens, 1885–1886. Three years of teaching at Michigan followed, as Instructor and Assistant Professor, during which period he was married, in 1888, to Miss Jennie Emerson, herself an A.B. of Michigan in 1884. In 1889, Miller returned to Leipzig, where he remained for two years, specializing largely in Classical Archaeology. On his return to this country, he spent one year at the University of Missouri as an Associate Professor.

Those years were Miller's *Wanderjahre*. In 1892, he accepted a call to the newly-founded Leland Stanford University as Professor of Classical Philology. There he spent ten fruitful years, when he went to Tulane University as Professor of Greek. His service at Tulane was from 1902 to 1911—from 1902 to 1907 as Professor, from 1907 to 1911 as Dean, and Professor of Classical Philology. His long career at the University of Missouri began in 1911. He was Professor of Latin, 1911 to 1929, Dean of the Graduate School, 1914–1930, and Professor of Classical Languages and Archaeology from 1929 to 1936, when he became *emeritus*. During this period, he was absent from Missouri during World War I, when he served in France and Italy as a Regional Director of the Y.M.C.A., and in 1925–1926, when he was Annual Professor at the School at Athens, directing the summer sessions at the School in both these years. After his retirement he was a Visiting Professor at Southwestern University in Memphis in 1938–1939, and at Washington University in 1940–1941. He taught in the Summer Schools of the University of Chicago in 1909, of the University of Colorado in 1920, and in the Summer School of the South, at Knoxville, Tenn., from 1905 to 1909. Between 1902 and 1935 he frequently led parties in Europe under the auspices of the Bureau of University Travel.

During this long and useful career, Miller received many honors. He was awarded an LL.D. by the University of Arkansas in 1916, while in 1932 his Alma Mater, Michigan, honored him with a Litt.D. degree. In 1910–1911, his last year at Tulane, he was President of the Classical Association of the Middle West and South; he served that organization on the Editorial

Board of the *Classical Journal* from 1905 to 1935, and was its Editor-in Chief from 1935 to 1939. In 1937 he was Editor of the *Standard American Encyclopaedia*.

Miller's bibliography was extensive, and he continued to write almost to the very end of his life. On his retirement from active teaching in 1936, a volume of *Philological Studies* in his honor was brought out, as Vol. XI, no. 3 of the *University of Missouri Studies*. In this volume is appended a complete bibliography of his writings up to that time. But much of his most important literary work was done after his retirement, the most noteworthy instance being a splendid translation of the *Iliad* into hexameters (in collaboration with William B. Smith) which appeared in 1944. To the archaeologist, he is best known by his *Daedalus and Thespis* (1929), *Greece and the Greeks* (1941), and by editions of Cicero's *De Officiis* and Xenophon's *Cyropaedia* in the Loeb Classical Library.

Miller was a profound lover of Hellas. To him every stone on the Acropolis of Athens was something at once sacred and revealing. He was an inspired teacher, a sound and brilliant scholar, and a loyal friend. He was noted above all for the courage of his convictions, and his willingness to stand out for what he believed to be right, even if his popularity might suffer. His integrity was so transparent in mind and purpose, that he never lost a friend by his championship of causes in which he was in a minority, and the reverse is also true—he never forgot a friend, and his friendship, once given, was permanent.

His service to the Archaeological Institute began in his years at Tulane, when he tried, without success, to organize a Society in New Orleans. On his removal to Missouri, he affiliated himself with the St. Louis Society, of which he was a faithful member, although owing to the distance between Columbia and St. Louis, he could rarely attend meetings. To the Institute's eldest child, the School at Athens, he was a devoted and ardent alumnus.

The last years of Miller's life were sad; his wife died in 1946, a daughter had predeceased them both, and one married daughter survives. His last illness was long, and there was never much hope of recovery, but he bore it with fortitude and Christian resignation. In his death the Archaeological Institute of America has lost one of its oldest and most loyal and devoted members. (S.B.L.)

PERCY EDWARD NEWBERRY, M.A., O.B.E., was born April 23rd, 1869, and died in his eighty-first year at his home in Godalming, England, August 7th, 1949.

Sixty years of his active life had been devoted to Egyptology and he was a respected and beloved member of that diminishing band of pioneers whose names remain household words to the workers of this generation.

His activities in the field, largely in the service of the Egypt Exploration Fund, as it was originally named, were many and varied: he published several volumes in the series of the Archaeological Survey of Egypt, was co-author and collaborator with such men as Petrie, Maspero, Garstang, Theodore Davis, and Spiegelberg in excavation reports, was the author of two volumes in the great *Catalogue Général* of the Cairo Museum, and of a work on scarabs. His connection with the sensational discovery of the tomb of Tut-ankh-amen has figured large in some of the press obituaries. It was Newberry who was largely instrumental many years previously in obtaining for the youthful Howard Carter employment as a draftsman on archaeological expeditions and who helped him to advancement in the profession. When the great discovery was made he was one of a small group of distinguished scholars who freely gave of their time, knowledge and experience in the difficult task of handling and evaluating the deposit.

Newberry's labors as a teacher were divided between his native country and Egypt. He was Professor of Egyptology at Liverpool University from 1906 to 1919, and until his death Honorary Reader in Egyptian Art at the same university. For four years, from 1929 to 1933, he held the post of Professor of Ancient Egyptian History and Archaeology at the Egyptian University in Cairo, giving inspiration to many of the young Egyptians on whom will rest the responsibility for safeguarding their national treasures in the years to come. A member of the British Association, Newberry was President of its Anthropological Section in 1923, and he was Vice-President of the Royal Anthropological Institute in 1926 and 1927.

The writer dined with Newberry less than a year before his death. He had just come up to London from active participation in a meeting of the British Association and was at the time full of enthusiastic plans for a new study on the decoration of Predynastic painted pottery, a subject to which he had already devoted a number of articles. His mental keenness, his charm of manner, and his courtesy and cordial friendliness to a much younger colleague were very endearing, and his death leaves the writer with a real sense of personal loss. (Dows Dunham)

ARCHAEOLOGICAL DIGEST

The Editor wishes to thank those who have helped him in abstracting the material for this issue of the *Digest*. They are Margaret Brine, Elizabeth C. Evans, Henry Immerwahr, Paul L. MacKendrick, and Giacinto Matteucig. The following are the principal periodicals reviewed: *Hesperia*, xviii, 1 (1949); *Journal of Hellenic Studies*, lxvi (1946); *Polemon*, i-iii (1947); *Rivista di Studi Liguri*, xii (1946), xiii (1947).

GREECE

Archaeology in Greece 1945-1947.—J. M. Cook surveys the advances made in archaeological excavations and publications in Greece, 1945-1947, by areas, Athens and Attica, the mainland of Greece, the Peloponnese, the islands, Crete, and Cyprus (*JHS*, lxvi (1946), pp. 108-121). (E.C.E.)

Chronology.—James A. Notopoulos (*Hesperia*, xviii, 1, Jan.-Mar. (1949), pp. 1-57) has discovered that Ferguson's law of the succession of secretaries in tribal rotation continued to apply in the Roman Imperial period. (P.L.MacK.)

Ionian and Greece in the Eighth and Seventh Centuries B.C.—R. M. Cook reexamines the evidence for the relations of Ionia and Greece in the eighth and seventh centuries B.C. The purpose of his article is to consider the justice of the theory that Ionia was in these centuries "the infants' school of Hellas." His arguments, based on Greek sources in literature and archaeology that are neither direct nor abundant, lead him to the conclusion that in literature the early Ionians led, but in art they were behind the most advanced Greeks of Europe. They were later in founding colonies; there is no trace of their commercial priority. The present insufficient evidence indicates that they probably were not the pioneers of Greek progress. Careful excavation, especially in Ionia, is the best hope of increasing our knowledge of this period of Greek history. (*JHS*, lxvi (1946), pp. 67-98). (E.C.E.)

Topography of the Agora of Athens.—Eugene Vanderpool, in *Hesperia*, xviii, 1, Jan.-Mar. (1949), pp. 128-137, traces on a plan Pausanias' route through the market-place. (P.L.MacK.)

Topography of Athens.—A. A. Papagiannopoulos-Palaos in *Polemon*, iii (1947), pp. 22-24, suggests locating the Diogeneum near the church of St. Johns' *'stin kolonna* on Euripides Street, mainly on the basis of inscriptions found in the vicinity. The same author, *op. cit.*, pp. 94-96, discusses a metroon, which was founded, according to lexicographers, near "the *barathron*" and which is to be located at the NW foot of Mouseion Hill where rock cuttings suggest a bouleuterion. (H.I.)

Gates of Piraeus Fortifications.—The location of four gates of the Piraeus fortifications, including one which has since disappeared, is given in the report by a Greek surveyor made in 1825 (I.A. Meletopoulos, *Polemon*, iii (1947), pp. 68-72). (H.I.)

Topography of Eleusis.—John Travlos, *Hesperia*, xviii, 1, Jan.-Mar. (1949), pp. 139-147, identifies the various gates mentioned in the inscription on the repairs at Eleusis, IG II², 1672. (P.L.MacK.)

Marathon.—Brief investigations in 1932 are described by G. D. Androutsopoulos in *Polemon*, iii (1947), pp. 129-136. Traces of obsidian found in the region of ancient Trikorynthos suggest neolithic settlements there; further surface finds include boundary stones, tombs, and traces of a road. At that time A. S. Arvanitopoulos discovered the Mycenaean tomb at Marathon, a discovery falsely credited to its excavator, Sotiriades. (H.I.)

Excavations at Corinth.—Saul Weinberg, in *Hesperia*, xviii, 1, Jan.-Mar. (1949), pp. 113-124, describes the excavations of 1947/48. In the South-east Building were found Megarian bowls, household pottery, and a series of terra-cotta figurines, including a gilded Aphrodite, half-life size, and a statuette of a philosopher. Wells in the shops of the South Stoa yielded column drums of the second century B.C. (possibly memorials of the sack of 146), drinking vessels, a Megarian bowl of Achilles, a marble plaque with two figures of the Mother-of-the-Gods type, and material from a painter's shop or studio. Cuttings were found in the theatre for a wooden *skene* antedating the Hellenistic stone construction. A well in the South Basilica contained fragments of pottery from the third quarter of the eighth century B.C., while the so-called Julian basilica (constructed under Claudius) yielded the first Mycenaean deposit to be found within the main area of the city, dated in the thirteenth century B.C., and including the only Mycenaean domestic ware found in mainland Greece, thus settling the controversy over the existence of a Mycenaean settlement within the area of the later classical city. (P.L. MacK.)

Sanctuary of Asclepius near Kamari.—An inscription of the Roman period found at Kamari near

Corinth seems to indicate the location of a sanctuary of Asclepius in that locality, the identification of which is uncertain (G. A. Androutsopoulos, *Polemon*, iii (1947), pp. 50-52). (H.I.)

Tritaia in Achaia.—P. A. Nerantzoules, in *Polemon*, iii (1947), p. 67, corrects the article in *RE* (1939). (H.I.)

Objects from a Tomb at Demetrias-Pagasae.—The remaining contents of a tomb partly published in *Polemon*, i, pp. 7 ff. and 199, and ii, p. 44, are illustrated and briefly described in *Polemon*, iii (1947), pp. 81-90, after notes left by A. S. Arvanitopoulos. They include a gold crown, necklace, earrings, etc., a silver kalpis, two silver pyxides, a small silver vase, a bronze vase with dogs chasing goats, an ivory statuette of Eros, and an ivory box with two scenes recalling the Persians of Aeschylus (A: appearance of the ghost of Darius, B: Atossa at Darius' tomb). (H.I.)

Tetrakomon Herakleion.—The two remaining inscriptions from this site in the Piraeus (see *Polemon*, i, 1947, pp. 227-248), as excavated in 1929, are published, together with reports on finds in 1933 and 1939, in *Polemon*, iii (1947), pp. 17-21, by A. A. Papagianopoulos-Palaïos. They are a small fragment of about 500 B.C., probably part of a sacred law, and a choregic dedication of about 350 B.C. (H.I.)

Chest of Cypselus at Olympia.—J. L. Myres in *JHS*, lxvi (1946), p. 122, reconstructs on the basis of Pausanias v, 17-19, the decoration and balance in bronze relief on the chest of Cypselus at Olympia. They were arranged in five zones, the first depicting in the centre-piece the "Games of Pelias," the second, Medea, Jason, and Aphrodite, the third, frieze-groups of chariots in rapid movement, the fourth, the Dioscuri, Helen between them, and Aethra at her feet, the fifth, five short friezes, in the centre of which is the delivery of arms by Hephaestus to Thetis. (E.C.E.)

Sculpture.—Through the kindness of Monsieur Jean Colin the Editor is informed of an article by Zoltán Oroszlán (in *Közleményei*, Bulletin du Musée Hongrois des Beaux-Arts, No. 4, May 1947, pp. 2-5) on the well-known Attic head, No. 152 in *Die Sammlung antiker Skulpturen* (Museum der bildenden Künste in Budapest, Krystall-Verlag, 1929). Colin corrects the Hungarian scholar, however, in placing the servant on the left of the relief, since the right side of the head is more highly finished. Oroszlán's date is 390-380 B.C.

Painted Stelae from Pagasae.—A. S. Arvanitopoulos' catalogue, published in 1909, is continued in *Polemon*, iii (1947), pp. 1-16 and 41-45, from papers left at the time of his death in 1942, but actually writ-

ten in 1925. Included are a coffered ceiling with painted sirens (no. 217), and other fragments of ceilings (nos. 218-221), a series of stelae including the stele of Aristocydes (no. 230), and a stele of two warriors (no. 235, plate 3). There are few illustrations. (H.I.)

Byzantine Art.—Kurt Weitzmann, in *Hesperia*, xviii, 2, Apr.-June (1949), pp. 159-210, believes that frescoes and scenes from rolls and codices mutually influenced each other, and that monoscenic frescoes with Euripidean subjects exerted retroactive influence on Byzantine miniature painting. Byzantine miniatures of the tenth century thus make possible the reconstruction of a lost branch of classical painting. The scenes portrayed come from the *Iphigenia at Aulis*, the *Medea*, and the *Hippolytus*, but also from the "lost" *Aegeus*, *Ino*, *Peliades*, and *Sthenoboea*, thus raising the question whether these plays were not still extant in Byzantium in the tenth century, though they had disappeared by the twelfth. The illustrations of the *Iph. Aul.* affect philological conclusions about the spurious ending of the play (lines 1578 ff.); they portray no scene beyond that point, and the subsequent verses may be later than the tenth century. (P.L.MacK.)

Kalligeneia and Hieros Arotos.—B. Ashmole in *JHS*, lxvi (1946), pp. 8-10, describes an Attic cup of Siana shape, said to have come from excavations in Rhodes, and now in the British Museum, to be dated before 560 B.C. Two scenes are represented. First, a woman seated on a stool, in attitude of grief. On her right is another woman, standing beside a flaming altar, and holding a liknon. At the altar is a file of six people, coming to a standstill in the last movement of a dance. All the figures are of women, except the sixth, a boy. On the other side of the cup is a scene of a sturdy but beardless man with hand to plough, urging on his team of oxen. Behind him a boy strides in the opposite direction, scattering seed, perhaps the same boy as in the first scene. This undoubtedly is a scene of a *hieros arotos*, intended to insure the success of the farmer's year, a more or less public festival, that is ritually and physically linked to the Thesmophoria, of which the fourth day, Kalligeneia, dedicated to human fecundity, is perhaps depicted in the first scene. If this interpretation is correct, these are the earliest known representations of the two festivals. (E.C.E.)

Cup by Douris.—M. Robertson in *JHS*, lxvi (1946), pp. 123-125, discusses a lost cup of Douris, of which a tracing is preserved in the British Museum, faithful enough to identify the picture as a late work of Douris, to be dated about 480 B.C. The scene represented on the interior is a symposium, late in the party, where the girl has fallen asleep on the couch,

while her companion, a bearded man, sits upright at the head of the couch, stretching out his hand above her. (E.C.E.)

Lekythos by the Achilles Painter.—J. D. Beazley in *JHS*, lxvi (1946), pp. 11–12, describes a white lekythos in his own collection, the work of the Achilles Painter in his later middle period, between 440–430 B.C. The scene shows a monument, a tapering stele, with gable and acroteria, standing on two steps, decorated with sash and chaplet. To the left stands a naked boy on rocky ground, probably the dead of the tomb. To the right of the stele a woman has approached with a sash in one hand and a perfume-vase in the other. (E.C.E.)

Triptolemus.—In *Polemon*, iii (1947), pp. 25–32, Th. A. Arvanitopoulou publishes a red-figured pelike in the Loverdos Museum, dated by her on historical grounds around 371 B.C. The obverse shows the sending out of Triptolemus, while the reverse, showing three youths, is interpreted as the arrival of Triptolemus in the Peloponnesus, with the Dioscouri present. A similar interpretation is proposed by the same author, *op. cit.*, pp. 53–55, for the red-figured bell krater from Vari in the Robinson collection in Baltimore (now *CVA* Baltimore fasc. 2, plate 48, 2a–b), commonly described as Bouzyges and the First Plough: according to the author, the obverse is more probably Triptolemus and the Plough, and the reverse, with three youths, Triptolemus and the Dioscouri. (H.I.)

Pottery.—Peter E. Corbett, *Hesperia*, xviii, 1, Jan.–Mar. (1949), pp. 104–107, publishes a bell-crater inscribed with the name of Leonidas, the Spartan hero of Thermopylae. The inscription suggests a date near 400 B.C., when there is evidence for Athenian good-will toward Sparta. (P.L.MacK.)

Standard Measures.—Margaret Crosby in *Hesperia*, xviii, 1, Jan.–Mar. (1949), pp. 108–113, describes samples found in the Athenian agora of the official standard measure for fruit, legumes, and nuts described in *IG* II², 1013, dating about 100 B.C. (P.L.MacK.)

Well-Heads.—Mabel Lang, in *Hesperia*, xviii, 1, Jan.–Mar. (1949), pp. 114–127, discusses and catalogues a series of sixteen terra cotta well-heads shaped like tops of large pithoi, found in the Athenian agora and corresponding to types illustrated on vases of the late sixth and early fifth century B.C. (P.L.MacK.)

The Minoan Signary.—In studying the linear scripts of Minoan Crete an agreed signary is needed, i.e. a customary order of signs, with a numeration by which they can be quoted, until their phonetic values

are ascertained. J. L. Myres in *JHS*, lxvi (1946), pp. 1–4, suggests such an arrangement of the signs, by typological categories, (a) arbitrary signs, composed of a few strokes, (b) alphabetiform signs, resembling Greek or Phoenician letters, (c) pictorial signs, resembling human, animal, or plant forms, (d) skeuomorphic signs, representing weapons, implements, vessels, or other furniture, (e) commodity signs, not derived from the preceding categories. (E.C.E.)

Mouseia on Mt. Helicon.—A catalogue of victors at this festival, found at Thespia, is published by A. A. Papagiannopoulos-Palaos in *Polemon*, iii (1947), pp. 73–79, who also completes the epigram *IG* vii, 1881 (pp. 79–80). (H.I.)

Inscriptions.—Georges Daux, *Hesperia*, xviii, 1, Jan.–Mar. (1949), pp. 58–72, publishes an inscription on the sending of a *theoria* from Andros to Delphi, discovered at Delphi over fifty years ago, and dated on the basis of letter styles to about 425 B.C. (P.L.MacK.)

Inscriptions.—Markellos Th. Mitsos, in *Hesperia*, xviii, 1, Jan.–Mar. (1949), pp. 73–77, publishes 10 inscriptions from Argolis and the Isthmus, some new, some corrections, additions, and joins in *IG* IV. (P.L.MacK.)

Sacred Law.—In *Polemon*, iii (1947), pp. 91–93, A. Ch. Chatzis corrects his earlier edition of a fragment of a sacred law found at Patras (see *Arch. Eph.*, 1908, p. 95), which contains provisions against luxury, and quotes other such provisions preserved in literary sources. The same author also has a note on *δραγατεύειν* (cf. *δραγάτης*, field-warden), found in a Thesalian inscription (p. 93). (H.I.)

Orgeones.—A careful study, based on the most recent epigraphic material, by N. I. Pantazopoulos, is an amplification of chapters of the same author's book *Δι' Ἑλληνικαὶ Κοινωνία*, 1946 (*Polemon*, iii (1947), pp. 97–128). (H.I.)

Inscriptions.—Charles F. Edson, Jr., in *Hesperia*, xviii, 1, Jan.–Mar. (1949), pp. 84–95, publishes three funerary epigrams from the neighborhood of the Macedonian village of Makriyalos which may establish the site of ancient Pydna and Olympias' tomb. (P.L.MacK.)

Inscriptions.—A. E. Raubitschek, *Hesperia*, xviii, 1, Jan.–Mar. (1949), pp. 96–103, discusses Phaidros, Cicero's Epicurean friend and teacher, who is revealed by Attic inscriptions to have been a member of a distinguished Athenian family which can be traced back to the third century B.C. (P.L.MacK.)

Dicasts' Tickets.—Some new ones are published by I. A. Meletopoulos, *Polemon*, iii (1947), pp. 33–40. (H.I.)

Ostraca.—A. G. Woodhouse in *Hesperia*, xviii, 1, Jan.-Mar. (1949), pp. 78-83, dates a decree in which Hyperbolus is the mover of an amendment in the latter half of 418/17 B.C., and thus makes his ostracism impossible until 417/6 at the earliest. (P.L.MacK.)

CYPRUS

"Naucratis" Chalices from Marium.—Two remarkable chalices from Naucratis, found in surreptitious diggings in the eastern necropolis at Marium, were acquired by the Cyprus Museum in 1944 and 1947, according to P. Dikaïos in *JHS*, lxvi (1946), pp. 5-7. The shape of both belongs to Price's type 1 (cup with foot which is conical, and a bowl-shaped piece dividing the cup from the foot), and they may be dated in the last quarter of the seventh or the first quarter of the sixth century B.C. The first chalice is decorated with a seated sphinx, the face of which is drawn in outline, while the body is filled with black paint. The second, slightly larger than the first, but lacking the sphinx, is decorated otherwise in the same manner. The decoration of the interior of the second varies a little, since there are two lotus flowers alternating with lotus buds instead of crosses as in the first. (E.C.E.)

Three Vaulted Basilicas in Cyprus.—A. H. S. Megaw in *JHS*, lxvi (1946), pp. 48-56, discusses three vaulted basilicas in Cyprus at Aphendrika Asomatos, Aphendrika Panayia, Sykha Panayia. The first is the best preserved, with the south wall of the nave, which is of four bays, standing to its full height, and the south aisle with semicircular barrel-vault complete and enough of the nave vaulting to show that it was semicircular. In its present form this church is a reconstruction with masonry vaults of an earlier building of similar dimensions, a normal, wood-roofed type of early Christian basilica. The second church is a well-preserved building of sixteenth century style covered with pointed barrel-vault, occupying the three western bays of the nave of a vaulted basilica, similar to, but somewhat larger than the Asomatos church. The third church is the smallest, having only three bays, but possessing a narthex, which is absent in the other churches. In all three churches two building periods exist, the first or original construction in the sixth century, the second at the end of the tenth century. Their most striking characteristic is their divergence from standard Byzantine types adopted in the eleventh and twelfth centuries. The period following the Byzantine reconquest in 965 seems on the basis of the present evidence the best period for their reconstruction. (E.C.E.)

Religious Documents from Cyprus.—T. B. Mitford publishes in *JHS*, lxvi (1946), pp. 24-42, a series

of religious documents, inscriptions and statues and statuettes, from Roman Cyprus. They include dedications to Nemesis, to Zeus Libranios at Khandria and Phassoula (7 inscriptions), to Zeus Olympios, ex votos to Theos Hypsistos (3), to Opaon Melanthios, to the Dioscuri, and to the Seven within the Stelai. (E.C.E.)

SYRIA

Excavations at Al Mina, Suedia.—M. Robertson publishes in *JHS*, lxvi (1946), p. 125, a fragment of a Fikellura amphora from Al Mina, Suedia, which is to be dated about the middle of the second half of the sixth century B.C. The find suggests that the eastern Greek contact with Al Mina was continuous in the sixth century. (E.C.E.)

PALESTINE-TRANSJORDAN

Numismatics.—Stella Ben-Dor publishes in *Berytus*, ix (1948), pp. 41-43, coins of Elegabalus which show that like Bostra, Petra became a colony in 221/222.

EGYPT

Papyrology.—Günther Klaffenbach comments in *Forschungen und Fortschritte*, xxv, 9/10 (May 1949), pp. 97 f., on the new fragment of the Oxyrhynchus Hellenica just published as *PSI*, xiii, 1304. It deals with events of 409-407 B.C., comes from a different manuscript than *P. Oxy.* 842, and while corresponding with Theopompus in one striking detail, leaves the general question of the authorship of this excellent history still open.

IRAN

Inscriptions.—In a paper published as *Hallische Monographien* No. 9 (ed. Otto Eissfeldt; 1949), Franz Altheim discusses the "Awestische Textgeschichte" on the basis of the two Ashoka inscriptions, that from Pulidamata in the Parapamisadae (id., *Weltgeschichte Asiens im griechischen Zeitalter*, i, Halle, 1947, pp. 25-43), and the slightly earlier one from Taxila (Sir John Marshall, *Arch. Survey of India*, 1914/15, pp. 25 f.; Altheim would identify this as an inscription of Ashoka before he became king), and a Parthian gem of the second century B.C., with an inscription in Greek characters. His conclusions are, that the oldest written text of the Avesta (in Aramaic consonantal script) goes back to the late sixth century B.C., that changing pronunciation developed the need (especially under the influence of the Greek scripts of eastern Iran and north-west India) of an edition in a vocalic script, and that this need was first satisfied in a rendering, or a number of renderings, in the Kushan area and time, a century or so before the definitive edition of the Sassanian Persians.

INDIA

General.—R. E. Mortimer Wheeler, now Archaeological Adviser to the Government of Pakistan, reconstructs from archaeological remains the capture and sack of Mohenjo-Daro in the mid-second millennium B.C., and associates this with the arrival of the Aryans (*Pakistan*, i, 1, April 1949, pp. 1-7).

Tabula Iliaca from Gandhara.—J. Allan in *JHS*, lxxvi (1946), pp. 21-23, describes a piece of relief sculpture, ordinary in quality, dated in the latter half of the second century A.D. from Gandhara in India, the first find of sculpture there bearing a scene from classical mythology. The story illustrated is that of Laocoon thrusting the spear into the wooden horse of Troy, as Sinon pushes the horse toward the walls of the city. On the left Cassandra, clad in Indian costume, rushes in dismay out of the Scaean Gate. The story of Laocoon here is essentially Roman, and the sculpture may be classed as such. It is important in the study of the chronology of the Roman *Tabula Iliaca*. (E.C.E.)

ITALY

Toponymy.—In *Rivista di Studi Liguri*, xiii (1947), pp. 46-55, B. Serra examines typical cases in the evolution of Romano-Ligurian names in -a: Hasta, Alba, Libarna, Pollentia. *Ibid.*, pp. 113-119, G. Alessio re-examines the significance of the name "Ligures" in the light of archaeological, historical, and linguistic data. (G.M.)

Arene Candide.—In *Rivista di Studi Liguri*, xii (1946), pp. 20-28, L. B. Brea relates that the cavern of Arene Candide at Finale Ligure gives us a picture of the succession of cultures in this region from the beginning of the last quaternary glaciation to the full historical age. The stratigraphy of this site may be of fundamental importance in the chronological relation between the Danubian and the Western world.

L. Cardini describes (*ibid.*, pp. 29-37) the intact Mesolithic and Paleolithic strata in the cavern of Arene Candide, one of the most important archives of quaternary prehistory.

R. Parenti (*ibid.*, pp. 38-41) makes some observations on the long bones of the Mesolithic man at Arene Candide. The morphometric characteristics of these bones are very close to those of the Mugem and Gramat types. (G.M.)

Iron Age Tombs.—U. Formentini (*Rivista di Studi Liguri*, xii (1946), pp. 49-58) studies chronological data of Iron Age tombs in central-eastern Liguria. The most influential center on the Ligurian civilization of the Iron Age seems to have been Villanova and Etruscan Bologna. (G.M.)

Neolithic Station.—In *Rivista di Studi Liguri*, xiii (1947), pp. 120-126, L. B. Brea considers the fundamental importance of the Neolithic station of Alba in the prehistory of Northern Italy. (G.M.)

Excavations at Albenga.—In *Rivista di Studi Liguri*, xiii (1947), pp. 141-183, N. Lambrogia describes the excavations conducted in 1938 and in 1939 on the ruins of the monastery of San Calocero, outside the walls of Albenga. The excavations yielded Roman Imperial, paleochristian, Byzantine, and late-Mediaeval material. (G.M.)

Rhegion, Zankle-Messana and the Samians.—On the basis of a new examination of the numismatic evidence E. S. G. Robinson seeks to show in *JHS*, lxxvi (1946), pp. 13-20, that the numismatic evidence does not contradict, as C. H. Dodd has earlier supposed, but rather supports the literary evidence to the effect that in 493 B.C. Ionian emigrants from Samos and Miletos, on their way to Sicily to found a new city there at the invitation of the people of Zankle, were persuaded by Anaxilas, in power at Rhegion, to seize Zankle instead. Hippocrates of Gela, overlord of Zankle, came to terms with them, and left them in possession. After Hippocrates' death in 491, Anaxilas occupied the city under the name of Messene until his death in 476. Robinson lists in an appendix the sixth and fifth century coinages of Rhegion and Zankle-Messene-Messana. (E.C.E.)

Archimedes and the Euryalus Fort.—A. W. Lawrence argues in *JHS*, lxxvi (1946), pp. 99-107, that the fort on the Euryalus at Syracuse, extended by Dionysius I in 402 and later, was modernized by Archimedes, chief military engineer to Syracuse during the siege by the Romans, 215-213 B.C. There are grounds for believing that everything from the towers to the outer ditch originated as part of one final design, dating just before the siege of 213 B.C., with the exception possibly of parts of the inner ditch and inner outwork, and the four platforms that link the towers. The plan of the fort agrees closely with the specifications of the manual of fortification by Philo, Archimedes' contemporary, and seems more advanced than the works at Selinus that are now probably to be dated to the period when Archimedes was a young man. (E.C.E.)

Neolithic Liguria.—In *Rivista di Studi Liguri*, xiii (1947), pp. 3-16, L. B. Brea discusses the commerce and industry of Neolithic Liguria in the light of painted pottery. (G.M.)

Red Figure Cups of Italiote Fabric.—N. R. Oakeshott continues Mrs. Ure's study of cups, which combine incised and stamped decoration with red figure painting, in *JHS*, lxxvi (1946), pp. 125-127, and pub-

lishes five examples of Italiote fabric in this technique. Three are of typical Apulian mid-fourth century style, two probably of Campanian origin of the same date. In addition he describes a plate and a jug decorated in the same fashion, both of Italiote fabric. (E.C.E.)

Hellenistic Gem.—In *Rivista di Studi Liguri*, xii (1946), pp. 87–90, P. Mingazzini describes a cornelian found at Albenga in 1940. The gem belongs to the end of the third century B.C., measures 13.5 mm., and it represents a ship led by Triton. (G.M.)

Rock Incisions.—G. Marro (*Rivista di Studi Liguri*, xii (1946), pp. 42–48) compares rock incisions of the Maritime Alps with incisions in Valcamonica. The symbolism of some of the 30,000 incisions is still obscure. (G.M.)

Inscriptions.—In *Rivista di Studi Liguri*, xiii (1947), pp. 21–28, N. Lamboglia studies the funerary stele of a *miles cohortis Ligurum* and its significance in the Romanization of Cemenelum.

T. O. De Negri studies (*ibid.*, pp. 29–45) a stele found in 1925 at Silvano d'Orba (Liguria). The inscription, in clear characters of the second century of the Empire, reads: L(ucio) CASTRICIO M(arci) F(ilio) POM(ptina) DECVRI(oni) PRISCVS F(ilius) F(aciundum) C(uravit). (G.M.)

AFRICA

Facilities for Study.—The Seminario Primitivo del Hombre in Madrid, through its collection of manuscripts, photographs and original finds, offers an excellent opportunity to become familiar with the great variety of cultures as found throughout the ages in Africa (Julio Martinez Santa-Olalla, *Publicaciones del Seminario de Historia Primitiva del Hombre*, Notas No. i, Madrid, 1947). (M.B.)

SPAIN

Excavations.—The recent excavations (1947) in El Cigarralejo, Mula (Murcia) as reported by Emerico Cuadrado Diaz in *Cuadernos de Historia Primitiva*, ii, 2 (1947), indicates that in a sanctuary which has been superimposed on one believed to have been destroyed in the third century B.C., interesting finds have been uncovered. Characteristic of the finds has been an abundance of animal forms carved from sandstone. It is suggested by the writer that the large quantity of horse forms may have been votive offerings used in the worship of Epona or some other god under whom horses received special protection. They are carved in a realistic manner and shed a new light on the little known Iberian culture. (M.B.)

Pottery.—In *Publicaciones del Seminario de Historia Primitiva del Hombre*, Notas No. 4 (Madrid, 1948), Bernardo Saez Martin studies sigillate pottery found in a Roman necropolis in the area of Palencia, and believes it to have been fabricated in Spain during the reign of Domitian. (M.B.)

FRANCE

The Theater of Nîmes.—In *Rivista di Studi Liguri*, xiii (1947), pp. 132–140, M. Louis discusses the importance of the amphitheater of Nîmes and compares its structural details with the theaters of Orange, Arles, Lyon, Vaison, Frejus, and the theaters of Djemila, Timgad, and Khamissa. (G.M.)

SWITZERLAND

Bronze Deposits.—In *Rivista di Studi Liguri*, xii (1946), pp. 59–66, A. Crivelli describes and illustrates 719 bronze implements and fragments of the Iron Age discovered at Arbedo (Switzerland) in 1946. The deposit, probably that of a bronze-foundry, as shown by the many ingots, dates to the Golasecca II. (G.M.)

BOOK REVIEWS

LES INSCRIPTIONS CRÉTOISES, ESSAI DE DÉCHIFFREMENT. By *Bedřich Hrozný*. French translation by *Madeleine David*. Pp. 412, pls. 18. (Monografie Archivu Orientálního, vol. xii) Praha, 1949.

The greater part of this work has already appeared in print: pp. 1-116 as "Kretas und Vorgriechenlands Inschriften, Geschichte und Kultur—I, Ein Entzifferungsversuch," in *Archivum Orientale Pragense*, xiv (1943), pp. 1-117; pp. 116-260 as "Les Inscriptions crétoises II, Essai de déchiffrement," in *Archiv Orientální*, xv (1946), pp. 158-302; pp. 330-352 as "Liste des signes crétois et de leur valeurs d'après notre déchiffrement," in *Archiv Orientální*, xvi (1948), pp. 162-184, of which the introductory paragraphs are here printed twice, pp. 310-311 and pp. 330-331. The new material consists (1) of translations of and commentary upon additional Linear-B tablets from Knossos, an inscription from Ras Shamra, and several inscriptions from Pylos; and (2) of discussions of three problems—"Place d'écriture crétoise dans l'histoire de l'écriture," "Sur la patrie originelle des Créto-Pélasges," and "Le problème de Pylos"—which were perhaps the justification for the *Geschichte und Kultur* of the original title. There have been added very full analytical indices to the whole work.

Hrozný's views on the origin of the Creto-Pelasgians are here supported by his readings of place names in the inscriptions. The people of Crete came from south-eastern Anatolia and northern Syria, and were thoroughly mixed in race. They were governed by a caste of conquerors, themselves largely of Indo-European origin. As for the Pylos tablets, Hrozný finds some support in the names he reads on them for their indigenous origin, suggested by Blegen on the basis of the conditions of discovery.

It is probable that this most ambitious *essai de déchiffrement* will shortly go the way of its predecessors and become a curiosity rather than a foundation for further work. Certainly the reviewers of the earlier published portions have not been struck by the felicity of the translations, nor have they approved, or even understood, the method by which Hrozný has made them (see e.g. A. E. Kober, *AJA*, l (1946), pp. 493-495, and J. L. Myres, "The Minoan Script, according to Professor Bedřich Hrozný," *AJA*, lii (1948), pp. 104-106). The new sections are no more convincing.

The problem which ought to be of most interest to those who will undertake similar studies of their own is why it is that this decipherment has satisfied its author, and has not satisfied any others. I think the answer lies in the very nature of the accounts preserved on the tablets, most of which are obviously

records of the receipt, expenditure, or possession of goods or services. The regularity of the system of bookkeeping here followed, and the use of ideographic representations of the items accounted for can make much of the meaning of the records clear even before the language is known. Of the sign-groups themselves the great majority are commonly recognized to be the proper names of places, persons, or deities, while the other parts of speech of the language itself are poorly represented. Now the decipherment of these tablets will be essentially a substitution of phonetic or ideographic values for the characters used in sign-groups. When substitutions are made in the majority of sign-groups, in the proper names, there is little in the combinations of sounds themselves that can guarantee or condemn the reading, and a very wide range of possible schemes of substitution will satisfy the ear. The principal valid test of these substitutions will be the correspondence of the names read with those assumed from other sources to belong to the time and place of the composition of these accounts. When, on the other hand, substitutions are made in the remaining word-groups, the decipherer naturally searches through the languages he knows to find a word which sounds like the result of his substitution, and at the same time has a meaning similar to what he has guessed on the basis of the form of the account itself. When the decipherer is as thoroughly acquainted with as many languages as Hrozný certainly is, the range of possible satisfactory combinations of sound and sense is very large, and few inscriptions will seem entirely without sense. The effect of Hrozný's wide knowledge of languages is that his Cretan language shows similarities in vocabulary and grammar to a surprising number of the languages of the Near East in the second millennium B.C. Will not the principal test of the language discovered lie in its reasonable relationship with just one of the languages which now seem possibly related to the Minoan? Nevertheless, both of these tests are reminiscent of the investigation of Psammetichus.

The simplest way to judge any proposed decipherment is to examine the method which has been followed by the author. Where he has been thorough, cautious, and precise, his solution deserves further serious consideration. Here, however, Hrozný has evidently failed to satisfy his critics. In fact, he has undertaken the reading of these inscriptions without first making certain necessary preliminary steps, among which the chief is the task of identifying accurately the characters of the script in which they are written. For an example, he reads as a single character (his no. 53, here with the value *sà*) the fourth character of the first line of his inscription no. 207 (repeated line 2

sign 5, line 3 sign 7), and the first preserved character of the fourth line of the same tablet (clearly shown both in the photograph, pl. x, and in the drawing, p. 285). The most obvious distinction between the two characters is that between two crossed legs and two straight legs with a third shorter line between them. Surely the scribe of this carefully written tablet has indicated by their structure that these two are *different* characters. The distinction made by another scribe between the same two signs may be seen in the tablet from Pylos (photograph, pl. xiv, drawing, p. 299) in the second line, the second character (=inscription no. 207, line 1 sign 4) and the tenth character (repeated line 1 sign 3, line 3 sign 14, line 4 sign 12, line 5 sign 21) (=inscription no. 207, line 4 sign 1). They are here read alike as no. 53 and inexplicably given the values sè/1 and s(à) respectively. The distinction is again between crossed legs and two straight legs, this time without the third shorter line. (It can be demonstrated by the analysis of the types of handwriting on the tablets that the presence or absence of the third shorter line is not indicative of a difference in value. These are rather the peculiarities of the scribe or of the training he has received.) Now if two different scribes, removed from one another as these two must have been in time and place, made a distinction between these two signs, ought not we to do the same? We *may* at some time discover that there is a general similarity of shape, but for the present we must preserve the distinction obviously intended as significant by the scribe. Hrozný is, of course, not alone in confusing these signs. Evans in *Palace of Minos*, iv, 2, f. 666(B) listed them both as B49 and does not distinguish them in any way; Myres in *JHS*, lxvi (1946), pp. 2-3 = *AJA*, lli (1948), pp. 94-95 identifies them as AB48; Sundwall, however, has distinguished them carefully (e.g. in "Alt-kretische Urkundenstudien," *Acta Academiae Aboensis, Humaniora*, x, no. 2, figs. 6 and 7), as does Kober (*AJA*, xlviii (1944), p. 65, n. 2).

The lack of precision evident in Hrozný's treatment of these two characters is found throughout his work in his readings of other characters, where he sometimes confounds two distinct signs, or more, and sometimes distinguishes between two occurrences of the same character. Without precise identification of the characters employed in the script not even Hrozný's thorough acquaintance with the many languages of the region of Asia Minor and beyond can suffice to discover the language of these inscriptions. Until there is made available a complete and accurate list of the characters of the Minoan script, a list which describes the variation of form of each character and indicates the criteria for differentiating similar forms of different characters, no *essai de déchiffrement* will have the reasonable chance of success it ought to have.

YALE UNIVERSITY EMMETT L. BENNETT, JR.

SEVEN PRIVATE TOMBS AT KURNAH, by N. de Garis Davies, edited by Alan H. Gardiner (Mond Excavations at Thebes. II). Folio, pp. x+59, pls. 41. The Egypt Exploration Society, London, 1948. Price, 84 shillings.

Together with a rich knowledge of the life and art of the ancient Egyptians and incomparable ability as a draughtsman and copyist Norman de Garis Davies brought to his work of recording and interpreting the tomb paintings of the Theban necropolis an energy and productivity which were far from exhausted by the numerous books and articles brought out during his lifetime. Among the material not yet published at the time of his death (November 5, 1941) were the drawings and descriptions of the seven decorated tomb-chapels of Ramesside date (Dyn. XIX-XX) which form the subject matter of the present book. Most of these chapels lie at the foot of the eastern slope of the hill of the Sheikh Abdel Kurnah, near the well-known tomb of the Eighteenth Dynasty vizier, Ramose (No. 55), which, with its Ramesside neighbors, was cleared and restored by Sir Robert Mond during the years 1903-06, 1925, and 1937-38, and published by Davies in 1941 (*The Tomb of the Vizier Ramose* [Mond Excavations at Thebes. I]). The plates of the present volume have been arranged and its text skillfully edited by the eminent Egyptologist, Sir Alan Gardiner, assisted by Mrs. Davies. The excellent indices were compiled by Raymond O. Faulkner, editor of the *Journal of Egyptian Archaeology*.

The tombs dealt with are as follows:

- No. 45 (Dhout), reign of Amenhotpe II, usurped by Dhotemhab, Ramesside Period: pp. 1-11, pls. i-ix.
- No. 31 (Khons), reign of Ramesses II: pp. 11-30, pls. x-xxi, xli.
- No. 341 (Nakhtamun), Ramesside Period: pp. 31-41, pls. xxii-xxx.
- No. 324 (Hatiay), reign of Merneptah (?): pp. 42-49, pls. xxxi-xxxiv, xli.
- No. 133 (Nefronpet), Ramesside Period: pp. 49-52, pls. xxxv-xxxvi.
- No. 331 (Penne, called Sul), later Ramesside Period (Dyn. xx?): pp. 53-55, pls. xxxvii-xxxix.
- No. 346 (Amenhotpe), Dyn. xx: pp. 55-56, pl. xli.

Though frequently of considerable interest, the paintings and inscriptions in these tombs lack the artistic merit and variety of content seen in the earlier New Kingdom tomb-chapels. This is forcibly brought home to us in the tomb of Dhout (No. 45) where, in the north bay of the forehall (pl. ii), one of the original Eighteenth Dynasty scenes has been preserved unaltered by the Ramesside usurper of the tomb. Here, in this one scene, we find the stately compositions, the well-proportioned figures, the clean draughtsmanship,

and the bright colors which are so noticeably lacking in the rest of the tomb, where the Ramesside artists have either re-worked the original paintings (pls. III, IV) or contributed their own loosely drawn and insipidly colored compositions (pls. VII-IX).

Khons, the owner of Tomb 31, was High Priest of the god Montu, Lord of Djorty (modern Töd, a few miles south of Thebes), and among the more interesting scenes in his well-known, but hitherto inadequately published, tomb are glimpses of the rarely represented sacred barque of Montu during its journeys by river between Töd and nearby Armant, the site of the principal temple of the god. On the east wall of the forehall (pl. XI) we see the barque being towed across the Nile and resting in a shrine at Töd; on the south wall (pl. XII), returning by river to Armant; and, on the west wall (pl. XIII), being borne by priests toward the temple at Armant, the pylon of which appears at the right of the scene, inscribed with the name of its builder, King Thutmose III of the Eighteenth Dynasty. Another pylon built by Thutmose III, this time in the great temple of Amün at Karnak, is shown in an extraordinary scene on the north wall of the hall (pl. XV), where Khons in his capacity of chief priest of the deified pharaoh accompanies a statue of the king as it travels by ship up the canal leading from the Nile to the basin and landing stage in front of the temple. From its general relationship to the landing stage we would seem in this painting to be looking at the north face of the VIII Pylon of the temple, rather than at the VIII Pylon, as suggested by Davies (p. 20). Among the deities of the West honored by Khons in the paintings in the sanctuary of his tomb-chapel (pl. XVIII) is King Nebhepetre Mentuhotpe of the Eleventh Dynasty, whose mortuary temple at Deir el-Bahri, with its shrine to the goddess Hathor, had for centuries been one of the principal landmarks and symbols of the Theban necropolis.

The paintings in the forehall of the little tomb of Nakhtamün (No. 341) contain much that is noteworthy, including, on the west wall (pl. XXIII), the figure of King Ramesses II reproduced in color by Mrs. Davies in her *Ancient Egyptian Paintings*, II, pl. C. On the opposite wall (pl. XXIV) Nakhtamün is attended by rows of minor officials, among them two men with curiously peaked skulls or skull-caps. The traditional scene of the weighing of the heart of the deceased tomb-owner, on the adjoining south wall (pl. XXVI), is enlivened by the presence above the balance of a male angel, the violent beating of whose four wings is suggested by groups of lines above and below them—a device commonly employed by modern cartoonists to indicate motion. Thanks to the figure of the king standing before it we can identify the image of the cow of the goddess Hathor seen on the west wall (pl. XXVII) emerging from the Theban mountain as a rep-

resentation of the well known sandstone statue of the animal contributed by Amenhotpe II to the shrine of Hathor at Deir el-Bahri (Naville, *The XIXth Dynasty Temple at Deir el-Bahari*, I, pl. XXIX).

When found, the paintings in the badly damaged tomb of Hatiaï (No. 324) consisted largely of fragments of mud plaster lying on the floor of the forehall; but out of these bits Davies was able to restore several delightful scenes, including one in which the tomb-owner, assisted by his wife, fishes with rod and line from a pool bordered with flowering shrubs (pl. XXXII). To the same skill and experience we owe a new copy of a much-cited scene in the tomb of Neferronpet (No. 133) showing the interior of a weaving shed with women operating four big vertical looms and stretching warp threads on pairs of upright frames (pl. XXXV). Except for a small panel in which a harper sings an improvised song to Penne and his wife (pl. XXXVI), the last two tombs of the group (Nos. 331 and 346) contain little of general interest. A close scrutiny of two texts in Tomb 331 has enabled Gardiner (pp. 54-55) to identify Penne as a son of Hatiaï, the owner of Tomb 324.

Of the forty-one fine, big plates which the book contains thirty-seven are in line and three in color. The only photographic plate (XLI) shows us the sanctuary in the tomb of Khons and a painted limestone group-statue of Hatiaï and his wife and mother found by Mond in Tomb 324.

In view of its author, its editor, its sponsor, and the distinguished society under whose auspices it is published it seems hardly necessary to add that *Seven Private Tombs at Kurnah* is admirable in every respect—a handsome and valuable contribution to our knowledge of the art and culture of the Egyptian New Kingdom.

METROPOLITAN
MUSEUM OF ART

WILLIAM C. HAYES

CYLINDRES ET CACHETS ORIENTAUX CONSERVÉS
DANS LES COLLECTIONS SUISSES. Volume I, 1^{ère}
Partie. MÉSOPOTAMIE: DE LA PÉRIODE PRÉHIS-
TORIQUE D'OUROUK JUSQU'À L'ART SARGONIQUE,
by Elie Borowski. Pp. vi+129, pls. IV. Ascona,
Switzerland. 4 volumes, subscription price Swiss
Francs 72.

In four volumes the author proposes to treat the subject of the glyptic art of the ancient Near East, comprising the seals of Mesopotamia, Iran, the Achaemenids and Sassanians; volume III by Dr. Heinz Mode will be on Syro-Aegean glyptic art. The whole will be illustrated by examples from Swiss collections, both public and private, so that the work will form a *Corpus* of all specimens known to exist in Switzerland. Very inadequate publication of some half-dozen of these seals have appeared from time to time, the rest

are totally unknown. The value and importance of such a complete catalogue will therefore be readily appreciated, for the work promises to be a revelation of hitherto unknown treasures.

In this first part of his undertaking the author describes his aims and method. In addition to a careful description and illustration of each piece he attempts to formulate a more accurate classification of cylinder seals in general. Justly observing that there is at present considerable confusion as to the co-relation and differentiation of the early periods because some scholars adhere to the nomenclature of one writer, others to the conflicting divisions proposed by another equally learned authority, he endeavors to evolve some standard arrangement which could be easily understood and would be acceptable to all schools of thought. He enumerates the chief sites where seals were discovered, and explains, with the help of diagrams, the formation of the various zones of influence. He also revises and brings up to date the known list of seals inscribed with the name of a king. In order to make clear why a particular seal is attributed to one period rather than to another he gives an archaeological commentary on the specimens which he afterwards describes in greater detail in the catalogue.

When the work is completed it should be a most useful publication of almost unknown material and a penetrating study of the entire subject of ancient Near Eastern glyptic art.

ROME, ITALY

E. DOUGLAS VAN BUREN

LES "POULAINS" DE CORINTHE, II, 414-300 B.C., by Oscar E. Ravel. Pp. 310, pls. LXXVIII. Spink and Son, London, 1948. £3-0-0.

The first volume of this work appeared in 1936 and dealt with the Corinthian staters from the beginning through the Peloponnesian War. This part carries the story down to the end of the mint's operations. Both deal exclusively with the staters; the minor coins are sometimes cited in evidence but are neither catalogued nor illustrated. M. Ravel may be forgiven for restricting his subject; a study which deals adequately with 1,130 varieties needs no excuse for what it does not undertake.

The core of the work is, of course, the catalogue and illustrations which present incomparably the greatest corpus of Corinthian Pegasai available. Collectors public and private will bless the industry and thoroughness of the author who has given them the means of identifying their own pieces. But behind the catalogue is the labor of arrangement and the difficult task of arriving at the principles on which arrangement should proceed. These familiar coins with the invariable Pegasus and Athena head have been touched upon here and there by other scholars as particular varieties attracted their interest, but none except M. Ravel has

had the hardihood to consider the whole body of them. Yet, as he easily proves, this consideration of the whole entirely invalidates most of the theories about one detail or another. A dozen special studies by Ravel himself are here absorbed in the complete work.

The material in Volume II deals with Period IV (414-387), Period V (387-307) and Period VI (306-300). These are quite different and demand different treatment. In the case of Period IV there is a positively frightening interrelation of obverse and reverse dies. Fig. 3 on p. 12 shows admirably the great complexity of the situation. Numismatists who have dealt with die sequences are accustomed to think of the seemingly process shown on Fig. 1 where obverse and reverse dies wear out alternately, one at a time, and are replaced by new ones, giving us a simple and conclusive proof of the order in which types were struck. But here four obverses are combined with nineteen reverses in such a way that eight share two of the obverses, ten share three, and one shares all four. This is only the most striking example of a practice general throughout the period, and the discovery is as important as it is unwelcome. It destroys at once all hope of a chronological arrangement of the issues by the symbols on the reverses, for it can hardly be doubted that the author's explanation is the correct one: a number of workmen striking simultaneously had access to a number of reverse dies, each of which was used until it became too hot, and then laid aside to cool while another was picked up. As the obverse dies were set into anvils at which the workmen were stationed, this process would give just the kind of complication without system which the coins show. Certainly the gradual wearing out and replacement of dies continues but it is now possible to indicate only in the most general way when one reverse is abandoned and another employed. For reasons of convenience, Period IV is divided into seventeen series and their relation is graphically illustrated on Fig. 4. As yet, however, the evidence for sequence is scanty. What is sure is that a number of reverses with different symbols were in contemporary use.

Now it has been generally believed that such symbols are the marks of the individual officials responsible for issues. Since Greek officials normally changed annually, it was a simple assumption that each reverse belonged to a single year, though of course there might be more than one official, and so more than one reverse symbol, each year. But that theory will not work here unless it be assumed that the first thirteen series are all the product of a single year, for Fig. 4 and the "Tableaux de Séquence" on pp. 103-113 show that there is no break in the connection of dies between them. For Period IV, then, the symbols are not the signs of controlling officials, but adjuncts to the type, religious, apotropaic or purely decorative.

It is not possible, therefore, to connect particular symbols in this group with particular events, nor is it possible to arrange the sequence on considerations of style, for entirely dissimilar heads are found with the same obverse die and vice versa. All this will be most annoying to the natural human instinct to arrange things neatly, but the truth is worth having even when it is inconvenient.

Period V is entirely different from its predecessor. Here there is no interrelation of dies at all except at the very beginning. There are twelve series, each showing a characteristic letter or pair of letters on the reverse accompanied by various symbols. Each series has its own obverse dies which are never used by any other. Head believed that the symbols were those of annual magistrates, but Ravel prefers the theory of Seltman that the letters identify the particular bars of bullion assigned to a certain official who coined as occasion arose, through subordinates appointed, not for a time, but *ad hoc*, whose marks are the symbols. This avoids the difficulties to Head's theory which he presents with force (pp. 51-53). It does not, however, take up at all the problem of time. Is one to suppose that the officials of the letters held office until their bullion was exhausted whether that took one year or a dozen? There is no mention made of the possibility that it is they who are the annual office holders and that the subordinates of the symbols are in charge of the various workshops.

The reason why this solution is ignored is that it is practically excluded by Ravel's chronology. He believes that Period IV lasts from the end of the Peloponnesian War to the Peace of Antalcidas (414-387); Period V from that point to the Ptolemaic occupation of Corinth (386-307). If the letters represent annual officials, we have only twelve years accounted for out of the eighty assigned to Period V. But the grounds for dating the periods are far from secure. The end of the fifth century is a plausible time for the change from a square to a round incuse which distinguishes Periods III and IV, and the argument for 307 is ingenious and convincing, but the choice of 387 rests only on the supposition that the strengthened position of Corinth after the Peace of Antalcidas resulted in an immediate reorganization of the mint. The difficulties raised by the selection of this point of division deserve very serious study, though they will not be resolved until more chronological evidence is available. A review cannot do them justice.

Period VI contains the sporadic issues with monograms, which are assigned to the period from 303 to 300 while Corinth was held by Demetrius Poliorcetes. Barbarous imitations and Pegasi with a Koppa but probably struck at other mints than Corinth are included in the period merely because they are obviously late. They are really a somewhat anomalous addition.

To the question of style the author returns again and again. An explosive mixture is produced by the peremptory fashion in which some eminent authorities have rejected any evidence conflicting with the assumption of regular development of style, combined with the discovery that portraits of Athena extremely unlike are actually used with the same obverse die. But the result: "Impossibilité de se servir du style pour le classement des monnaies grecques," is an overstatement by which we must not be misled. Conditions of mass production in the fourth century cannot be used to invalidate a whole technique. Style is the hardest of all numismatic evidence to use safely because its interpretation is so subjective and so difficult to communicate. Used without discretion it is certain to lead to false conclusions, as the extremes which Ravel cites clearly show. Nevertheless it must not be abandoned merely because it is difficult or because embarrassing exceptions to its validity appear. Corinth proves that in the fourth century types may be contemporary which no one would have associated on grounds of style, which is very well to keep in mind, but style has been confirmed by other evidence much more often than it has been contradicted.

It is easy to see where progress is to be made. Ravel himself has shown what admirable use can be made of the evidence of hoards of which very few were at his disposal. In Sicily—in Palermo particularly—is an abundance of evidence which was not available to him. In that mass of material lie the answers to many of the problems still unsolved. Let us hope that a competent numismatist will be allowed to work with it.

Oscar Ravel died shortly after the publication of his second volume. It is good to think that he had the satisfaction of seeing his great work finished. A tribute is due his wisdom and magnanimity in being willing to publish his results at this stage. As has been suggested, there are certain large questions still to be cleared up. And there are a number of details for which at any minute chance might provide the key. He must have been much tempted to wait a little longer and a little longer for the sake of completeness. It is fortunate for us that he was willing to leave the final touches to others. It is fortunate also for his memory. Any work that is done now on the Corinthian Pegasi will be in the nature of supplement to Ravel.

YALE UNIVERSITY

ALFRED R. BELLINGER

ANTIOCH-ON-THE-ORONTES IV, PART ONE, CERAMICS AND ISLAMIC COINS. Edited by *Frederick O. Waagé*. Contributors: *Howard Comfort, George C. Miles, Frederick O. Waagé*. Pp. 124, Figures 101, pls. 18. Princeton University Press. 1948. \$20.

Of the three authors whose names appear on the title page the editor of this volume of the Antioch series, Frederick O. Waagé, has contributed about two

thirds. The major part of his work, comprising about half the number of pages in the text, is a publication of the Hellenistic and Roman Table Ware of North Syria.

A prodigious amount of work has gone into the publication of the Classical pottery. The author omits no detail that can possibly add to the understanding of shapes, clay, surface treatment, stamps, and other determinable minutiae. If the net results in terms of chronology, ceramic history of the millennium (ca. 300 B.C.-700 A.D.) covered by the report, and usable historical data seem less impressive than might be expected from such a thorough treatment, this is, in part at least, due to the peculiarities of the site, the want of adequately published comparative material from other Roman sites in the Near East, and to the inherent difficulties of the subject. The author prefaces his study with a discussion of these factors and makes frequent allusions to the fact that "levels of occupation in the usual sense of the term do not exist" at Antioch.

The material falls naturally into three major chronological divisions: Hellenistic, Roman, and Late Roman, the last of which roughly covers the period more commonly and more correctly called Early Christian, sometimes Early Byzantine. There are, of course, no sharply drawn lines of distinction. The question of local manufacture as compared with imports has been fully studied, but the conclusions have perforce been loosely drawn in many instances. The importations from Italy and Gaul, which form a separate part of the volume, are, of course, more readily recognized and better known than importations from the Aegean lands or from North African centers.

The pre-Roman pottery is further divided into *Early Hellenistic* (end of the fourth to the early second century B.C.), and *Late Hellenistic* (later second century to the Augustan period). This is followed by *Early Roman* (Augustan period to the early part of the second century A.D.), *Middle Roman* (latter part of the second to early part of the third century), and *Late Roman* (latter part of the third through the seventh century). This simple chronological scheme would have formed an adequately stable rack on which to hang all the variations occurring within each group. Unfortunately in the actual classification of the material the author has introduced a far too complicated system, to be discussed below.

In addition to the material from Antioch, pottery from two other Syrian sites, Tell Judaideh and Tabbat al-Hammām, excavated by the Syrian Expedition of the Oriental Institute, is also included. To the earliest group, dating from the foundation of Antioch and Seleucia shortly before or shortly after 300 B.C., belong a few imported pieces, probably of Attic origin. The great bulk of early Hellenistic pottery, however, is the product of a vaguely defined "ceramic region" includ-

ing all of Syria and extending beyond its borders. The demand for foreign pottery and imitations of imported ware combined with the "native traditions in pottery-making" resulted in a mass-produced pottery whose chief characteristics are uniformity and conservatism. These tendencies make it peculiarly difficult for the excavator to present a neatly formulated, readily adaptable chronological treatment.

In the Late Hellenistic Period a new type of ware, the so-called Pergamene, becomes predominant to such an extent as to drive practically all other pottery out of use. To his earlier articles on this ware the author here makes certain corrections and adds a penetrating study. The chief innovation of the new treatise is a division, based chiefly on differences of shapes, of the Pergamene ware into Hellenistic "Pergamene," which he prefers to call Late Hellenistic Red, and the Early Roman "Pergamene." He concedes that both may have been made in the same place. He further reviews the whole literature on the origin and distribution of this product, without, however, arriving at very definite positive conclusions. He excludes Pergamon as the center of its production, but retains the name "Pergamene" in conformity with established usage. He would ascribe its manufacture to a single center, which he believes to have been "a town somewhere in the eastern end of the Mediterranean, but not one in the immediate vicinity of Antioch." Whether this conclusion will seem equally valid after more of the "Pergamene" pottery from Aegean sites becomes known may well be questioned, since it would imply a considerable export trade from the east to the cities in Greece and western Asia Minor in the Late Hellenistic Period.

Though the author retains protestingly the name "Pergamene" after emphasizing its unsuitability, he omits in silence any reference to another equally well-known—if equally incorrect term, "Megarian bowls." These appear in the classification among the Hellenistic Miscellaneous Pottery as "Moulded Bowls," and nowhere in the text is there a hint that this term covers the ware commonly known as "Megarian Bowls." They range in date over half a millennium, the last three centuries B.C. and first two centuries A.D. Within this period no definite chronological divisions have been made beyond a vague grouping into Earlier and Later Local Bowls.

Both the quantity and quality of this group of pottery would seem to merit a more sympathetic treatment than the author accords it. He seems to have a decided preference for plain, wheelmade ware without figured decoration. The fragments of the relief ware are, however, well illustrated. The photographs alone fill ten out of a total of thirty full page illustrations of pottery. A few of the pieces appear to be Attic importations, but the presence of moulds among the pottery

is proof of the existence of local manufacture.

The Early Roman Period is the age of importations par excellence. Not only does the importation of Italian and Gaulish Terra Sigillata fall within the century and a half covered by this division, but this was also the time when Roman "Pergamene" pottery held the market. Like the earlier pottery designated by the same misnomer, the "Pergamene" ware of the first and second centuries A.D. has received a very full and expert discussion. It is in this field that the author's most important contribution has been made. There follows a brief description of the "Samian" ware of which only 28 fragments appeared during three seasons of excavations. Chronologically they come after the Roman "Pergamene" ware.

The Middle Roman Period, covering roughly the second and third centuries A.D., is characterized by marked decline, not only in the quality but even the quantity of terracotta ware at Antioch. Since many of the mosaics of the houses indicate that this was a prosperous era, the author concludes that Antiochenes were then sufficiently wealthy to have their meals served on metal plate which has not been preserved. This seems too simple an explanation to account for the marked paucity of pottery. Prosperity would hardly have decreased the amount of pottery in use, even if more metal ware was purchased than before. In the absence of stratified deposits, to which the author makes frequent references, is it not more likely that the absolute dates given to pottery and mosaics should be changed so as to shorten this period of little and poor terracotta ware?

The Late Roman Period, which is further subdivided, extends from the middle of the third century to the Arab conquests in the seventh. The fine red ware of superior quality and finish produced during this period has raised the author's interest to a pitch of enthusiasm which is particularly refreshing. "The tactile and optical appeal of this smooth, fine red pottery, usually free of the meretricious distraction of representational decoration, and the superior craftsmanship, which produced plates over .30 m. in diameter with floors less than three millimeters thick, combines to place this pottery, considered purely on its ceramic merits, high in the list of all ancient wares." In the case of no other class of pottery has he let himself go to such an extent. He resents the neglect of this ware by excavators at some other sites, especially Corinth, but seems to be somewhat confused about the difference between the terms "unpublished" and "neglected." His research into the origin of this ware, which was widely distributed in the Mediterranean area in Early Christian times, is enlightening but not definitive. His review of the evidence from a number of sites leads him to the conclusion, expressed with due caution, that North Africa was the home of the Late

Roman Red Ware (his Late B). A brief discussion of Coptic and gray ware follows the chapter on Late Roman pottery.

The section devoted to "Imported Western Terra Sigillata" is contributed by Howard Comfort, whose expert knowledge in this field is well known. His list of abbreviations constitutes a useful working bibliography. In spite of his own and many other contributions to the subject he terms "Italian sigillata . . . almost virgin territory for research."

The date of the first appearance of Italian ware in Antioch is neatly fixed at ca. 10 B.C., and the peak of this importation he would place at ca. 15 A.D. (Why must specialists cloak their opinions in such studied circumlocutions as "before the middle of the second Christian decade," when a simple "before 15 A.D." would do the job so much less equivocally?) A few late pieces extend into the reign of Tiberius, but in general the importation of Italian pottery into Antioch belongs to Augustus' time.

Some 65 years later the importation of pottery from Gaul began. In the intervening period "from Tiberius to Nero the local wares at Antioch had the field to themselves." This statement is not quite consistent with the results of Waagé's dating of the non-local Roman "Pergamene" ware, which he would place between the reign of Augustus and "some time in the first half of the second" century A.D. The heyday of "Pergamene" ware seems to have ended before the appearance of "Samian" ware which Waagé would date about the same time as the importation of Gaulish ware. Though the limits of the period of the Roman "Pergamene" ware at Antioch are purposely made rather elastic, it is obvious that the gap between the Italian and the Gaulish importations is very neatly filled by the Roman "Pergamene" ware, likewise imported, though apparently from less far away. This fact, not commented upon by either author, is probably significant. It might even have some bearing on the crucial problem of the provenance of "Pergamene" pottery.

Howard Comfort's chapter is well documented, and the arrangement of the material with consecutive numbering, given both in the figures of photographs and in the plates of profiles, makes this part of the volume easy to use. The drawings, in most cases showing both the section and the outside view, are particularly satisfactory. Drawings of the stamps with signatures appear in the text together with the description of each fragment.

The chapter on the Glazed Pottery is contributed by F. O. Waagé. This includes some early examples of Hellenistic and Roman date, but most of it has to do with the Medieval Glazed Pottery of the ninth century and later. The earliest appearance of wheel-made pottery with blue and green glaze (Group A) the author unhesitatingly places before the appearance of

Hellenistic "Pergamene" ware in the second century B.C., and on the basis of shapes he suggests that the new technique may have begun in the third century B.C. It continued to be made sporadically into the early years of the Roman empire.

The moulded glazed ware of I-II centuries A.D., though rare, is well known from Roman sites in Italy and the Aegean, but its appearance in fairly large numbers at Antioch is significant. There is—at Antioch at least—no continuity between this early glazed ware and the fully developed Medieval pottery of more than five centuries later.

The chapter on Medieval Glazed Pottery is hardly more than a minute description of the material at hand. The author states his reasons why this must be so, and chides the medievalist for his failure to provide the excavator with a convenient guide of Medieval pottery. The reasoning of this apologia will seem less than convincing in view of the fact that the author's use of such literature as does exist on the subject is not obvious. What can one make of a statement like the following? "The use of conventional names for the better-known types of Medieval pottery and the reference to published pottery from other excavations naturally have no place in a typological description like this report." In the reviewer's opinion the use of conventional names would by no means seem out of place. If such names are retained, even when they are admittedly wrong, in the case of Hellenistic and Roman pottery, there seems to be no sound reason for treating the Medieval pottery at Antioch as if it existed in a vacuum. One might reasonably question the practical value of a typological treatment by which such a limited amount of medieval sherds yields to a classification into 12 main groups, each with several sub-headings and the whole finally is split up into 115 varieties of pottery. The minute description of the colors of glaze and "body" (the author's term for biscuit or ware) will hardly enable the reader, even with the aid of the photographs, to visualize the appearance of a given sherd. The following item picked at random will illustrate the system of classification used:

VI GREEN DECORATION

A. On White or Colorless Glaze

5. On yellowish colorless on slipped buff to salmon body.

There is more detailed description on the same order of this single variety in the catalogue. After a few pages of this the reader would like to barter the whole scientific terminology for a few descriptive terms like "measels ware," "finger printed," or what have you.

Some references to the color plates in such publications as *Corinth XI* (published 1942) by Charles H. Morgan would be particularly helpful. This useful and

thorough publication of Byzantine pottery is not once mentioned.

The system of classification and numbering used both for the Classical and the Byzantine pottery the author frankly calls "experimental because it advances a specific system which is intended to be tested and changed or abandoned for a better one as the results of such testing dictate." The present reviewer would like to urge that it be abandoned and that a simpler system be adopted that would be applicable to any site where similar pottery is found. As a permanent system of numbering it is far too complicated and time-consuming for the user. The volume cannot be used as a handy reference book for the pottery published in it. The classification of the Classical pottery (explained on pp. 5-6) is by shapes and each hundred numbers stands for a particular period or category. Thus 1-99: Early Hellenistic; 100-199: Late Hellenistic; 200-299: Hellenistic Miscellaneous, etc., down to 900-999: Late Roman (Late Roman C, D and other late wares). But sandwiched in with this system on the plates is a series of other designations prefaced by capital letters. Here H stands for Hellenic which is followed (!) by E. H. = Early Hellenic. H. M. means Hellenistic Miscellaneous which follows 199. But one of the "centuries of numbers" in the first system, 200-299 (see above) also stands for Hellenistic Miscellaneous, of a different kind, to be sure. Some of the designations seem to have been picked for the sole purpose of confusing the reader. Thus MR = Middle Roman (numbers 600-699 in the first system also cover Middle Roman) is followed by R. M. = Roman Miscellaneous (likewise covered by 700-799). Most of the letters designating these groups are the initials of the term, e.g. S = Samian, GW = Gray Ware; but in LA the second letter is a purely alphabetical designation and the two letters LA = Late A, but in reality Late Roman A.

All these terms are, of course, explained in the text, but unless the reader has made a complete study of every page he will be unable to use the book at all. It would be a major undertaking to memorize the system in toto, and the alternative is to keep turning back to the key on pp. 5-6 for explanations. But the worst offense against the user of the book is the numbering of the individual items in figures and plates. There is no method as far as the reviewer is aware by which the reader may refer back from the figures, all at the back of the book, to the text. In many cases the individual sherds in the figures are not numbered at all, and where such numbering occurs each figure has its own series beginning with 1. When references to the figures are given in the text such cumbersome phrases as "Fig. 35, above lower left corner" are often resorted to. These shortcomings are so obvious that one cannot but deplore that a volume containing so much useful infor-

mation should have been made practically impossible to use. The only section conveniently arranged is that on Imported Western Terra Sigillata by Howard Comfort, in which the pieces are numbered consecutively 1-228, and these numbers are given in the figures of photographs and repeated on the plates. The rest of the work on the pottery could have been presented just as conveniently by using a similar system.

The section on Medieval pottery contains a brief account of "Chinese and Related Pottery." This is followed by a "Technological Report on the Chinese Pottery" by Frederick R. Matson, Jr., the purpose of which is to test the degree of glossiness and the amount of lead used in the glaze of the pottery of Chinese origin. Only a small number of sherds were tested, but the results indicate considerable variation in the composition of the glaze. A wider application of this kind of test might yield important information on the provenance of imported varieties of glazed ware.

The volume also contains the publication, by George C. Miles, of the Islamic Coins found at Antioch. These have been separated from the rest of the coins, a catalogue of which is being prepared by Dorothy Boylan Waagé, but the final publication has been delayed because of conditions created by the war. The coins are well illustrated on five full pages of figures. The obverse and reverse of almost all the coins illustrated are given together. Much historical data has been made available from the coins, and it seems particularly regrettable that it did not prove feasible to associate the pottery more closely with the coins.

One discovery of exceptional interest has been made by Mr. Miles. The Antioch coin collection contains some 90 examples of "Elephant coins," a puzzling class for which no explanation has hitherto been found. Sixty-nine coins of this kind turned up in the Theater area at Corinth in 1928. They were part of a hoard containing seventy-three Byzantine coins, all of the eleventh century. Apart from these and the coins from Antioch the "Elephant coins" seem to be unknown. The author, who will make a more complete study of this group, ventures the conjecture that they were coined by the Seljûqs of Syria, probably at Aleppo, between the years 1085 and 1114 A.D. He further suggests that their rarity may be due to the fact "that few collectors have taken the trouble to acquire coins so barbaric and enigmatic in appearance." A further search among collections here and in Europe he hopes will bring to light other examples of this interesting series.

UNIVERSITY OF CHICAGO

OSCAR BRONEER

TESTIMONIANZE E MOMENTI DI SCULTURA ALESSANDRINA, by A. Adriani. Pp. 45, pls. XIX. Rome, "L'Erma," 1948.

This slender fascicle, the second of the *Documenti e*

Ricerche d'Arte Alessandrina, contains an ambitious reexamination of the monuments that may be ascribed to Alexandrian art and attempts to date its stylistic developments through Roman times. A shorter Appendix, which is a reprint of an article published in 1947 in *Le Tre Venezie*, seeks to vindicate the right of the Gaul of Ghizeh to be included in the corpus of Alexandrian sculpture.

Adriani makes a marble head of a young woman acquired in 1938 for the Museum of Alexandria in the Paris art trade the keystone of his discussion. The head is remarkable for its two rows of tightly rolled curls which hang down on each side, and for the singular peaked turban-like head covering previously known from a statuette in Ince-Blundell Hall.

The head which may represent a young Dionysiac initiate, according to Adriani, is of unknown provenience. The author's documentation of the Egyptian character of this type of hair dress is convincing, but his attribution of the head to Alexandrian centers of art seems less inevitable. Adriani dates the head between 225 and 175 B.C. and considers the Ince-Blundell Hall statuette a later, and independent development.

With this touchstone Adriani is able to bring into association with Alexandria a considerable number of female heads and to outline the chronology of stylistic developments within these groups. The author's diligence and ingenuity are everywhere manifest and command respect. But, none the less, the question persisted in the reviewer's mind whether a particular style of wearing the hair is a sufficiently sturdy foundation on which to erect an Alexandrian school of sculpture. Even in imperial portraiture, where nothing more generic than the identity of an individual is involved, it can prove a treacherous criterion.

The decision to reprint the article on the Gaul of Ghizeh as an appendix to the longer article seems unfortunate. The defense of the Gaul as a product of Alexandria is both highly subjective, as it is perhaps inevitable, and, at the same time, produces in the reader a desire to learn how sculptures so dissimilar in every way as the Gaul and the groups discussed earlier can both be derived from the same center of sculptural activity.

HUNTER COLLEGE

MERIWETHER STUART

ROMAN PORTRAITS, by Gisela M. A. Richter. The Metropolitan Museum of Art, New York, 1948. \$1.50.

This monograph of beautiful plates includes the whole valuable collection of more than a hundred marble busts, statues and heads both in the round and in relief, also several outstanding portraits in bronze, on gems and on gold coins. The notes give the provenance and list the chief publications of the works described and illustrated. The whole development of

Roman portraiture is represented from the American-like realistic rugged Republicans (who invite comparison with American business men) through the restrained classicism of the Augustus and Julio-Claudian periods and the reassertion of realism with the practical bourgeois Flavian emperors, to the third-century portrait busts with a hard and troubled expression. The story ends with the colossal head of Constantine, which has lost the life of even the third-century heads; it is carved in a few distinct planes with clear-cut features, two-dimensional, preparing the way for the monumental figures of Byzantine mosaics. The book has *multum in parvo*, the best, most scholarly, and most interesting treatment of the subject in five pages of text. The unnumbered fifty-six pages of figures are an important demonstration of visual education, and the learned and original 110 notes have material of interest to every student of Roman sculpture and Roman civilization.

UNIVERSITY OF
MISSISSIPPI

DAVID M. ROBINSON

ESSAI SUR LA PROVINCE ROMAINE DE BÉTIQUE, by R. Thouvenot (Bibliothèque des écoles françaises d'Athènes et de Rome, fasc. 149). Pp. 748, figs. 179, map 1. E. de Boccard, éditeur, Paris, 1940.

Mommsen once remarked that a good study of the Roman empire would be impossible until monographs on its various provinces had seen the light of day. In his preface, M. Thouvenot explains that his ambition has been to supply this need, so far as Baetica is concerned.

The ambition, indeed, is a worthy one; historians have needed for southern Spain a study that would perform the service rendered by M. Thouvenot's compatriots, MM. Desjardins, Jullian, Déchelette, and Grenier, for their own native Gaul. The work is necessarily one of synthesis rather than of final interpretation; the reader may draw his own conclusions, but will have at his disposal a wealth of detail that needed assembling, along with indispensable bibliographical material and a helpful *Index Locorum*. (This reviewer looked for an *Index Rerum*, but was disappointed; however, the Table of Contents goes into reasonable detail.) Unfortunately, the ancient literary documentation is by no means as plentiful as that relating to Gaul, nor has archaeological investigation gone much beyond the fortuitous and obvious in Spain, but we are still able to form a fairly adequate picture of the terrain, "l'occupation du sol," the civilization in general, and the effects, if not the actual processes of Romanization.

The choice of Baetica (roughly Hispania Ulterior) as the object of a study apart from the rest of Spain is justified by its distinctive unity, geographical, ethnic, economic, and consequently, administrative. Lying

between the sea and the Sierra Morena, it was known for its wealth long before the Roman conquest, and visited by merchant convoys from the eastern Mediterranean before Carthaginian and Greek competed for a permanent foothold. Although the administrative boundaries of the region varied, M. Thouvenot follows Ptolemy in his description of Baetica—a term which was not used officially until Augustus divided Hispania Ulterior into Lusitania and Baetica.

The *Essai* begins with a physical description of the country, discusses the much-disputed site of Tartessus (choosing a location conforming to Strabo 3.1.9, 2.11), and passes on to Phoenician, Greek, and Carthaginian influences, the Roman conquests, political and administrative life under the republic and the empire, economic life (with special reference to mines, mining methods, and machinery), religion (pagan and Christian, with a 6-page note on the purported visit of St. Paul to Spain), urban life (including theaters, amphitheaters, baths, and temples), highways, bridges, navigable waterways, private homes, funeral monuments, sculpture, decorative art, and Christian monuments. As in many otherwise attractive French *manuels*, the illustrations are scarcely first-rate, and the maps patently home-made. One wonders, incidentally, whether the treatment of French works in American bibliographies is as erratic in respect to capitalizations as that of English works in French bibliographies. One notes, too, that in M. Thouvenot's bibliography, Tenney Frank is entered under "T."

The final value of a work such as this may be appraised according to the objective which the author announces in his preface: its contribution to our understanding of Roman imperialism. As to the purely political and administrative problem, we are in a position to reach a fairly clear conclusion: to a territory with a well-developed economic life, Rome brought peace, the basis of prosperity. As in Gaul, the merchants and farmers had a tremendous stake in the continuance of the *pax Romana*, the price of which was trivial in relation to the returns. There was little or no local patriotism upon which political or cultural resistance might be based. Roman interests, on the other hand, conflicted in no way with those of the provincials; law and order was the primary Roman objective; colonization apparently caused no serious displacements of the native population; and here was initiated the policy applied so successfully later on in Gaul—the liberal enfranchisement of provincials in the Roman political order.

The most remarkable phenomenon here, as also in Gaul, is of course the submergence of the local culture. As we well know, by 100 A.D., or sooner, Baetica was more Roman than Italy. There are practically no epigraphical traces of native culture; even native nomina and cognomina are rare. The art is simply common-

place Graeco-Roman; the literature is simply part of Latin literature in general. While the results of this process of acculturation are thus manifest, the process itself thus far eludes definition. For the ancient writers of history, in common with intellectuals of their time, were obsessed with the political tradition (in the strict derivative sense relating to *polis*). Thus our information concerning pre-political and sub-political processes and events must be laboriously reconstructed. This is a task for future historians, for whom M. Thouvenot has provided a useful tool.

UNIVERSITY OF
MINNESOTA

NORMAN J. DEWITT

SUPRALINEATE ABBREVIATIONS IN LATIN INSCRIPTIONS, by A. E. Gordon. Pp. 122. University of California Publications in Classical Archaeology, 1948. \$1.50.

This is a study of some 1,100 inscriptions taken from *CIL* which have straight or curved lines over abbreviations, with alphabetical lists of words abbreviated and of abbreviations so marked. The practice doubtless has its origin in the Republican custom of marking numerals with a line above. This is sometimes extended to other words in the first century, much more commonly in the second and third. There is a decrease in the fourth, a revival in the fifth and the peak in the sixth. The types treated are Suspension (ABB for Abbas), Contraction (AFRCA for Africa) and Duplication (AVGG for Augusti). In all categories the practice is so far from uniform that its presence or absence in any one inscription cannot be safely used for dating.

YALE UNIVERSITY

ALFRED R. BELLINGER

L'IPOGEO DI SAN SALVATORE DI CABRAS IN SARDEGNA, by Doro Levi. Pp. 91; 11 figures, 24 pp. of plates. Roma: La Libreria dello Stato, 1949.

The little chapel of San Salvatore near Lake Cabras in western Sardinia has long been noted among the neighboring villagers for an underground well whose waters reputedly have healing powers. Since 1935, however, the waters have been diverted to another well in the courtyard behind the chapel, and the hypogeum, now closed to the public, has been studied by Professor Levi. His monograph embodies the results of his researches.

The hypogeum consists of a complex of rooms around a circular well-chamber; this is reached by a flight of steps leading down from the chapel to a central corridor. Two rectangular rooms open to right and left of the corridor and three apsidal rooms open off the well-chamber in what Levi describes as *pianta trilobata*. The dimensions are modest, the greatest width and greatest length being little more than 10

meters. Rooms and corridor are barrel vaulted. The walls, formed below by the rock out of which the building was cut and above by rows of bricks with occasional rows of narrow sandstone blocks, were originally covered with a smooth reddish-yellow plaster. They were decorated, probably at the time of the building's construction or very soon afterwards, with mythological scenes or figures. The remains of the original decoration are deplorably small; they seem to be limited to one of the apsidal rooms, and consist of a fragmentary picture of Heracles strangling the Nemean lion, two standing divinities approached by a flying Eros, a seated female figure, Pegasus grazing, and a panther; a graceful picture of a naked dancing girl and fragments of two others may be part of the original scheme, according to Levi. What we have to deal with otherwise is a mass of graffiti—inscriptions, mostly unintelligible, and drawings of various kind and quality.

Levi bases his interpretation of the frescoes on the convincing hypothesis that the hypogeum was a sanctuary dedicated to some water divinity or divinities. Heracles, tutelary deity of therapeutic springs, was addressed in his healthgiving capacity as *ἀλεξικακός, ὑγείας δότηρ, σωτήρ, salutifer*; as *ἀποτρόπαιος* he was regarded as effective against the evil eye. The two standing divinities are apparently Aphrodite, in the *Venus genetrix* type, and Hermes; both deities are at times associated with water cults and are also grouped as deities of fertility and generation. Eros, although portrayed like one of the Hellenistic *putti*, may be regarded as the cosmogonic deity. The seated figure must be a Nymph, perhaps of topographical significance; and Pegasus, creator of such springs as Helicon, Hippocrene, and Aganippe, is thoroughly appropriate. Much less convincing is Levi's view that the three dancers formed part of the original design. Their diminutive proportions do not suit the frieze pattern that the figures of Aphrodite and Hermes suggest, and the technique, which does not seem to resemble that of the larger figures, is certainly not beyond the powers even of an amateur, as many a schoolboy's notebook could show.

Those inscriptions which are clearly ancient provide little information or interest, with two exceptions: a complete Greek alphabet which Levi regards as very significant, and the record of a certain Rufus, who was so constant a visitor or so proud of himself that he inscribed his name six times. Among the more modern inscriptions one is interested to find part of the Mohammedan creed in Arabic script of about the 16th or 17th century.

The pictorial graffiti naturally vary widely in subject and quality: infantile caricatures of the human form and features, crude quadrupeds, birds, dolphins and other fish, attempts to copy the Pegasus, Aphro-

dite, or the panther, and geometric "doodles" form a large part; but there are two groups of special interest to Levi—representations of boats, from the simplest of rowboats to two-masters, and a number of drawings connected with the circus. It is in his interpretation of these groups that Levi most strains our credulity. As Levi himself admits, supervision may well have become sporadic and careless fairly soon after the erection of the shrine (p. 66); many a visitor would find the smooth plaster an irresistible attraction; for the Sardinian fishermen and seamen their own craft would offer a natural subject; and, if interest in the circus was so great that we find circus representations in the catacombs (p. 29), it is surely not surprising to find such representations here. But Professor Levi is reluctant to allow anything that may have mystic or symbolic meaning to escape him. The apotropaic possibilities of the Greek alphabet are exploited to the utmost, and the nautical representations are either appeals to a tutelary deity's help or tokens of thanksgiving. Granted all this, it is still difficult to see how the fact that the universe was sometimes symbolized by a representation of the circus can make the quadriga graffiti more intelligible. Most of these *scarabocchi*—Levi's own word (p. 11)—actually seem to be more worthy of a psychologist's attention than the serious research of an archaeologist.

The fact that the hypogeum, both in form and decoration, is unique in Sardinia has impressed Levi; and this has had an unfortunate effect. Almost every statement or hypothesis serves as a jumping-off board for an excursus on related material. The result is that we have a series of miniature essays on the iconography of Heracles and the Nemean lion, on ancient ships, representations of quadrigas, Heracles *agrestis*, Eros as a cosmogonic deity, and the like. But the numerous parallels and details are not always contributive: after hearing about alphabets depicted in a single line, in rows of four, seven, nine, or twelve, about alphabets disposed vertically, horizontally, and *βουστροφιδόν*, or an alphabet lacking the first letter arranged in three rows of five and one of three, one wonders whether it matters if they are arranged systematically or not; sometimes the erudite discussion seems to lead to no conclusion; but it is exceptionally disturbing to be met in the middle of an essay on Eros with the statement that the scenes just mentioned *hanno poco in comune con la nostra scena* (p. 47). This display of erudition is regrettable, for it tends to obscure the unique nature of the monument; and if Levi's style did not have a particularly lucid quality his monograph would founder under the weight of detail.

The date at which the hypogeum was constructed is not accurately determinable. However, careful study

of the frescoes suggests that they belong to the Constantinian era; they are free from the more violent expressionism and pathetic effects of the Severan period and show none of the hieratic rigidity of fifth century and Byzantine art; comparison with mosaics and especially with frescoes from a tomb discovered at Ascalon in 1938 confirm this suggestion. The method of construction is characteristic of the later Roman Empire, and investigation of the trilobate plan and its use in civic buildings (e.g., *thermae*) and religious architecture indicates that the most likely date for the hypogeum is the early fourth century or possibly the late third century. How soon did it become a Christian chapel? That is another unanswerable question. Several graffiti (e.g., the alphabet, fish, peacock) are of important significance in Christian iconography, but they were also significant in mystic cults of the later Empire; they must therefore be regarded as unreliable evidence. The well-chamber, however, would serve as an excellent baptistry, and it is probable that the sanctuary was adapted to Christian purposes after little more than a century of pagan use. But, as in many cases, the pagan spirit proved ineradicable; the belief in the well's healing powers persisted, and Heracles *σωτήρ* emerged as San Salvatore.

The monograph is excellently printed; the plates are of high quality, considering the difficulty of making satisfactory photographs of underground graffiti; one misses a picture of the well-chamber itself, though there seems to be nothing of particular archaeological interest in it. There is a useful index, but no bibliography; this, however, can easily be extracted from the numerous notes, placed at the end of the text where they will distract only a reviewer's eye. One lays the book down with a feeling of regret that so much learning and excellent workmanship should have been expended on a subject that might have produced greater effect with less display.

YALE UNIVERSITY CHRISTOPHER M. DAWSON

THALATTA, DER WEG DER GRIECHEN ZUM MEER, by Albin Lesky. Pp. 341; 38 illustrations. Wien, Rudolf M. Rohrer, 1947.

Hidden within the great lexicographic and encyclopaedic enterprises of Classical learning are a great many topics for separate studies. The work on the *Thesaurus Linguae Latinae* has encouraged investigations of individual terms, and many such word studies have contributed greatly to our understanding of Roman civilization as a whole. In the Greek field, the absence of a modern *Thesaurus* and the lack of precise terminology have retarded, but not prevented, similar investigations. Yet from the various entries of the *Realencyklopädie der Klassischen Altertumswissenschaft* have grown many monographs dealing with

problems of Greek and Roman civilization. A number of these monographs have been incorporated into the encyclopaedia itself, thus providing a hiding-place rather than an outlet for the learning of their authors, and increasing intolerably the size of this voluminous publication. The book under review is a rare exception in which the material which served, or could have served, as an encyclopaedic article was re-used, or used, for a leisurely comprehensive study of the subject, of more than three hundred pages of well written text and an even greater number of pertinent footnotes. In addition to some good illustrations and a brief but workable index, the reader will be pleased to find also a list of the passages from ancient authors used in the composition of the book; for this list will give him at a glance the main references to *thalassa* and related terms in Greek literature.

Every synthetic study must have a thesis, and that of this book is indicated by its sub-title: the road of the Greeks to the sea. Lesky claims, rightly I think, that the Greek attitude towards the sea is derived from the Greeks' experience on the shores of the Aegean and is based only to a small extent on any concepts brought with them from their land-locked Indo-European home, wherever this may have been. There is nothing original or surprising about the thesis, but it emphasizes once again the significance of the link between Greek lands and Greek civilization. If Greek history is the history of a maritime people, and if Greek literature, and to a much lesser extent Greek art and philosophy, is the expression of a sea-faring people, then the main element of Greek civilization must have taken shape after the Greeks arrived on the shores of the Aegean sea.

In spite of the many topical discussions, dealing primarily with linguistic and mythological problems, Lesky's book contains an historical account based primarily on the evidence provided by Greek literature, but considering as well art, religion, and general history. The chronological arrangement is most obvious in the last four chapters which, comprising about half of the book, deal with Epic and Lyric poetry, and with the Classical and Hellenistic periods; the last named includes also the late Republic and the Augustan age, because Lesky feels, rightly I think, that Roman poetry and art of that period are part of the Hellenistic civilization.

The first half of the book, also comprising four chapters, contains more systematic accounts: of the Greeks before they arrived on the shores of the Aegean (mainly linguistic), of the Minoan-Mycenaean attitude towards the sea (mainly archaeological), and of Oceanus and the other gods and goddesses of the sea (mainly mythological),

It is impossible to give a brief summary of a book

which itself contains rapid surveys of a large part of Greek literature and art, but mention may be made of the principle which guided Lesky in the presentation of his subject. Historically, the Greeks seem to have passed through three stages in their attitude towards the sea. During the heroic age, a certain distance is noticeable, characterized by awe, admiration, and challenge. The period of colonization culminated in the Persian Wars which made the Greeks, and especially the Athenians, masters of the sea; if Classical literature indicates a thorough familiarity with the sea, this is but a reflection of the historical experience of the Greeks. The Hellenistic age, finally, reveals in its relation towards the sea the same playful sentimentality and pathetic exaggeration characteristic of Hellenistic literature and art. This affirmative attitude is set against the background of hostility which Lesky observes in all periods, and which he seems inclined to trace back to the originally continental origin of the Greek race. It may be questioned, however, whether this hostility, equally pronounced in Hesiod and Libanius, has its origin in this or in any other particular quality of the Greek mind, or whether it is not a reaction as natural as the affirmative attitude which Lesky traces through the millenium of Greek civilization.

If the value of a book stands and falls with its specific contributions to our knowledge, Lesky's work will not be considered a great book. This reviewer, however, believes that we are in great need of synthetic studies like Lesky's *Thalassa*, and that this book is a fine example of the way in which the results of specialized research can be brought to the attention of all friends of the Classics, scholars, students, and laymen alike.

A. E. RAUBITSCHKE

PRINCETON UNIVERSITY

LA CITÉ DE DAVID, Compte-rendu des fouilles exécutées, à Jérusalem, sur le site de la ville primitive, deuxième campagne 1923-1924 by *Raymond Weill*. Institut français d'archéologie de Beyrouth, bibliothèque archéologique et historique, Tome XXIV. Vol. I, plates XLII. Vol. II, pp. 132. Paris, *Paul Geuthner* 1947. Price 2250 Frs.

The present volume gives an account of the excavations of the south end and the south entrance to the ancient city of David. The excavation area adjoins the French excavations of 1913-14, and is close to the work of Bliss in 1896-97. At the north end of the citadel some work was done by Guthe 1881, Parker 1909-11, Macalister 1923-24, and Crowfoot 1927-28. The fortified area is approximately 350 meters long and a hundred meters wide at its widest point, yet much of the area remains unexcavated. The author presents

not only the results of the campaign of 1923-24 whose publication was delayed by the war, but tries to draw together the results of all excavations to present a logical picture of chronological development.

The rocky plateau on the southeast spur of the hills of Jerusalem was first fortified and occupied by the Canaanites, and to this period belongs the first canal which discharges the rainfall on the citadel into a reservoir. In the time of David a second canal was built bringing water from a spring to a reservoir outside the walls. At this time it was the citadel of the king and center of the city. Another reservoir was constructed in the seventh century.

One more tomb belonging to the time of the kings was discovered, a rock cut room covered apparently with a vault. Close by were a series of rooms with shallow basins cut in the rock, which the author believes were for sacrifices to the dead.

The first eleven plates are drawings, the rest photographs excellently chosen to show the results. They are chosen, however, entirely from the topographical and architectural point of view. Too many of them lack a scale to show exactly the size of stones, width of walls, etc.

The trouble with the book from the point of view of the archaeologist is that the evidence presented is entirely architectural and literary. A note at the end states that the furniture of the tombs is still preserved in the museum. The four large tombs previously discovered in the citadel belong to the late bronze age, the new one to the early iron period. Whether these tombs are to be identified with the tombs mentioned in the Bible, of David and his successors, remains a moot question. Biblical scholars are still divided on the question whether the royal graves should be sought inside or outside the walls.

The exposition of the results of the work is clear and the conclusions reasonable. Chronology based on appropriate periods drawn from literary sources for the construction of walls and aqueducts remains, however, an hypothesis. Further publications will be eagerly awaited. Meanwhile the present volume is a most welcome addition to our gradually increasing knowledge of ancient Jerusalem.

CLARK HOPKINS

UNIVERSITY OF MICHIGAN

SEMITIC WRITING—FROM PICTOGRAPH TO ALPHABET, by G. R. Driver. The Schweich Lectures of the British Academy, 1944. Pp. xvi+221; plates, 57; figs. 97. London, 1948. \$4.50.

This new book from the pen of the eminent Oxford Semitist undertakes to fill a need characteristic of the present state of our knowledge of Semitic epigraphy.

It is the need for a new critical appraisal of the evolution of alphabetic writing, in the light of an ever-increasing mass of new pertinent data discovered by recent archeological exploration.

To claim validity of any degree, needless to say, such an appraisal presupposes competent inquiry into the nature of the inscriptional data involved: their historical and environmental premises, their linguistic and phonetic implications and, above all, their true epigraphic peculiarities. It is only after a painstaking inquiry of this kind, to which he has dedicated the major part of his book, that Professor Driver proceeds to bring the vast material he examined to bear on the all-important problem of the evolution of writing in the ancient Near East and, specifically, of the origin and development of *alphabetic* writing.

The formulation of this problem has of late undergone all but complete metamorphosis. During the past few decades, exploration in various areas of the eastern Mediterranean have yielded alphabetic records of a puzzling variety of consolidations, of diverse modes of execution, and of an antiquity previously unheard of—reaching back into the first half of the second pre-Christian millenium. In all the areas concerned—Sinai, Palestine, Phoenicia, Ugarit—archaic alphabetic writing has been found side-by-side with epigraphs either in Egyptian hieroglyphics or in Mesopotamian cuneiform or in both the one and the other. Thus the old question as to whether and to what extent these two non-alphabetic scripts, known to have been in use since 3000 B.C., or even earlier, had enhanced the beginning of alphabetic writing has assumed new urgency. Moreover, certain symbols of the archaic alphabets appear to represent unmistakable outlines of common objects of nature, and this in strict agreement with the names (of corresponding symbols) that have been transmitted in later times—"ox"-*aleph*, "ripple of water"-*mem*, "(man's) head"-*resh*—so that it now becomes clear, and may no longer be said to depend entirely on one's lively imagination, that the pictographic principle, which underlies both Egyptian hieroglyphics and Mesopotamian cuneiform, must have played a part in the emergence of the alphabetic system of writing.

In short, by the evidence now at the disposal of the epigraphist, the problem of the origin of the alphabet can no longer be separated from the fact that the two pre-alphabetic systems, that of Egypt and that of Mesopotamia, were well known and practiced in the eastern coast-lands of the Mediterranean, and that their diffusion in these lands reached its culmination at about the period of the newly discovered archaic alphabets. By the same evidence, some of the most wide-spread notions concerning the history of alphabetic writing have been rendered either plainly un-

tenable or highly debatable. Thus, it is no longer possible to say that alphabetic script was first characterized by the right-to-left direction of writing and that it was confined from the beginning to linear execution. Nor is it any more safe to say that alphabetic writing originated in Phoenicia or that the Greek-Italic alphabets are all based on the well-known North Semitic alphabet system of twenty-two letters and no other system.

Following the triad traditional with the Schweich Lectures, Professor Driver has compressed the exposition of his far-flung subject into three chapters superscribed, respectively, "Cuneiform Scripts," "Alphabetic Writing," "The Origin of the Alphabet." He is aware that the treatment of Egyptian script would have deserved an entire chapter instead of the general survey to which he has limited it (pp. 132-140). In view of the conviction he shares with recent scholars that the impact of Egyptian writing had been decisive for the "invention" of the alphabet, it is indeed regrettable that he should not have subjected his account of hieroglyphic script to the admirable thoroughness and minuteness with which he treats of cuneiform script. Specifically, a detailed epigraphic study of the Egyptian inscriptions from Sinai and Byblos would seem to be imperative for the light they might shed on the far-reaching diversity in alphabetic epigraphy as exhibited, respectively, by these two centers of archaic uniliteral writing.

Professor Driver's book will be welcomed by scholars for its timeliness in laying bare the problem of the alphabet in its new import and new ramifications. Different scholars, however, may deem this or that of its three chapters more profitable than the two others. Some will no doubt find the chapter on "Cuneiform Scripts" particularly helpful and, indeed, long overdue. As far as one can see, this is the first time that the data essential to the understanding of the history of writing in Mesopotamia, in the internal and external sense of the word, have been made available to the general reader in lucid and forthright presentation. Careful illustration and annotation pertaining to the original sources no less than modern bibliography ought to make the chapter useful to Assyriologists as well.

The chapter on "Alphabetic Writing" is designed primarily to introduce the reader to the archaic inscriptional materials and to help him obtain a firsthand insight into the new historic situation brought about by their discovery. Here, again, the presentation is amplified throughout by references to the material sources as well as to the pertinent modern literature, by photographs and drawings of the inscribed legends

and—with but occasional omissions, as in the case of the Tell el-Hesi legend¹—by juxtaposition of varying attempts made at decipherment and interpretation.

As could hardly be otherwise, the most ambitious and most challenging part of the book is its final chapter, dedicated to the problem of "The Origin of the Alphabet." It must be said to be characteristic of that problem that its difficulties and intricacies have increased, rather than decreased, in direct proportion to our growing knowledge of the phenomena of alphabetic writing, that is, in proportion to the growing accumulation of witnesses to its long history and its early vicissitudes. It is therefore sound scholarly procedure when the author often winds up the exposition of a given point by warning the reader that the theory or theories he has adduced with regard to the point under discussion cannot be said to be conclusive. On several occasions, however, theories equally debatable are endorsed by the author without sufficient critical reservation or indeed with no reservation whatsoever.

The entire chapter might have been rendered more conclusive, I believe, by close consideration of the technique, as well as the morphology, of alphabetic writing in the various areas of its early diffusion. Obviously, the degree of affinity between different systems of writing, whether alphabetic or non-alphabetic, is to be determined not merely by the forms of the symbols they employ but also by the position and aspect of otherwise identical symbols, by the accession of the symbols to one another, by the succession, make-up, course, and direction of the line of writing. Thus, whether employing horizontal rows on a free surface or broken (or curved) lines on an adorned surface,² Phoenician scribes invariably agree with the technique of Ugaritic and Babylonian cuneiform, in marked contrast to that of Egyptian hieroglyphics, (1) in making all symbols (excepting only that of *l*) face in the direction of writing, whether the line is moving right-to-left or left-to-right, top-to-bottom or bottom-to-top, (2) in allowing each symbol to occupy a space of its own, and (3) in giving no more than one space to each symbol. It would therefore seem at least doubtful whether "every factor in writing . . . points indisputably to a close connection between the Egyptian and Phoenician scripts; and no single factor . . . suggests any connection between the Sumerian-Accadian and Phoenician scripts" (p. 139).

Similarly, Greek writing agrees with South Arabic, but disagrees with Phoenician, in the position of *lambda*, in the vertical aspect of *alpha* and *sigma*, and in the *boustrophedon*. When to this is added (1) that both Greek and South Arabic employ a circle, either plain or with a dot or stroke (cf. p. 145 and p. 174), for a

¹ See this JOURNAL, Vol. xlv (1940), pp. 93 ff.

² As, e.g., in the inscriptions of Abibaal and Elibaal.

cognate sound (*w/o*); (2) that both share with Ugaritic in the use of a cross sign for another cognate sound (*ch/h*); and (3) that in Greek the vowels *a* and *e* are represented by signs whose cuneiform counterparts represent 'a and 'e in Ugaritic (cf. p. 149), then the unqualified postulation of complete affinity between the Greek and Phoenician alphabet systems, and that of entire independence of the Greek alphabet from any other Semitic system of uniliteral writing, seems open to serious question.

Guided by a rather sketchy knowledge of the ancient Near East, scholars of past generations were prone to suggest when, where, and by whom alphabetic writing had been initiated. Judging by the incalculably wider and sounder (though no doubt still sketchy) knowledge available at present, Professor Driver arrives at the conclusion that it is impossible to decide as to "the time and place of the invention of the alphabet" (pp. 185 ff.). But should not this non-liquet attitude be carried even further?

Is it at all warranted to speak of the "invention" of an alphabet system? Is there sufficient ground for the assumption that a system must have been, or indeed could have been, completed and consolidated before a single Semitic word or phrase had ever been rendered in uniliteral writing? Is there even sufficient reason to believe that a mere set of symbolized phonemes, devised by an "inventor," would have enabled an entirely illiterate person to compose written records? Might not the process have been just the reverse? Might not uniliteral writing of words and phrases of the simplest kind—such as could be directly borrowed from the so-called Egyptian pseudo-alphabet—have been in use for a long time before systematic consolidation could be completed, the consolidation varying in various areas: Ugarit, Phoenicia, Palestine, Sinai, South Arabia?

By the evidence now available, the origin of the Greek alphabet is only seemingly less uncertain than that of the Semitic alphabet. Might not here, too, the process have been pragmatic and inductive in nature? Specifically, might not the Greeks have acquired the habit of writing simple words and phrases in various locales simultaneously (in the coast-towns of Asia Minor, the Islands of the Aegean Sea, the Hellenic mainland), and this from a great variety of Semitic

informants (including such as had employed *alpha* and *epsilon* for 'a and 'e, *omikron* and *chi* for *w/6* and *ch/h*, the *boustrophedon*, the vertical aspect of *alpha* and *sigma*), many centuries before they acquired a systematized "Phoenician" abecedarium of twenty-two symbols, complete with their names and order, as well as their forms and values?

The above hints and considerations cannot of course detract from the worth of Professor Driver's effort—a stimulating work of vast learning, a timely contribution to the problem of the history of writing.

JULIAN OBERMANN

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ESQUEMA PALETNOLÓGICO DE LA PENINSULA IBERICA, by *Julio Martínez Santa-Olalla*. Second edition. Pp. 156, pls. 64. Publicaciones del Seminario de Historia Primitiva del Hombre, Madrid, 1946. 45 pesetas.

Twelve chapters running to 7 or 8 small pages, on the average, set forth the entire prehistory of the Iberian peninsula from the dawn of the Palaeolithic to the time of Romanization. The style and organization are completely didactic. There are no footnotes and references are by implication to the works listed in a terminal bibliography under general headings such as Stone Age, Bronze Age, etc. Many of the views expressed appear to have a large idiosyncratic element, as do the chronological tables which follow immediately after the text.

The original appearance of this work was in 1941 when it was published by the Sociedad Española de Antropología, Etnografía y Prehistoria. The present edition has some of the characteristics which pervade "cram" books no matter what language they are written in. Whether it serves this purpose the reviewer does not know. One feature which certainly puts it out of this category is the plates. These are almost wholly good half tones, not integrated in any way with the text but accompanied by a separate section of 100 pages of detailed captions and explanation. Among the plates are a number of vertical air views of Iron Age fortified towns.

T. D. McCOWN

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PLATES

PLATE I



EWER OF GOOD FABRIC, SECOND LATE HELLADIC PERIOD. NOW AT THE UNIVERSITY OF MISSISSIPPI.

[Robinson, pp. 1-9]



A



B

LATE HELLADIC CUP.



C

LATE HELLADIC TANKARD.



D

LATE HELLADIC STIRRUP VASE.

[Robinson, pp. 1-9]



A
TOP



B
BOTTOM

LATE HELLADIC STIRRUP VASE.



C

LATE HELLADIC THREE-EARED PITHOS.
[Robinson, pp. 1-9]



B

LATE HELLADIC THREE-EARED PITHOS.
[Robinson, pp. 1-9]



A



B

LATE HELLADIC EWER.
[Robinson, pp. 1-9]



A



1

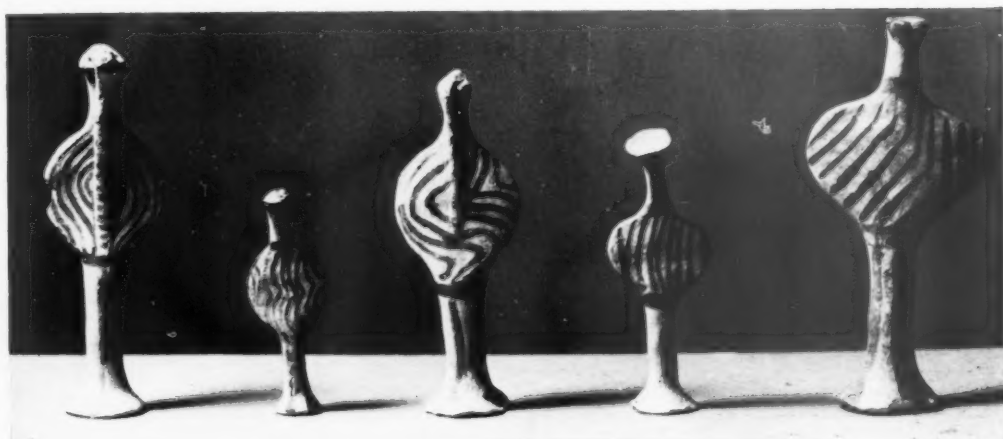
2

3

4

5

A. Front View



1

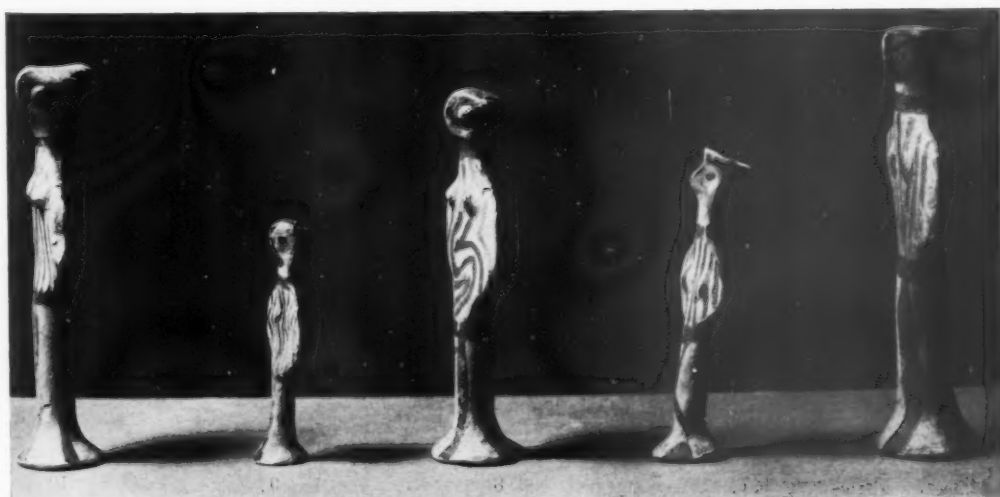
2

3

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B. Rear View



1

2

3

4

5

C. Side View

FIVE HELLADIC STATUETTES.
[Robinson, pp. 1-9]



6

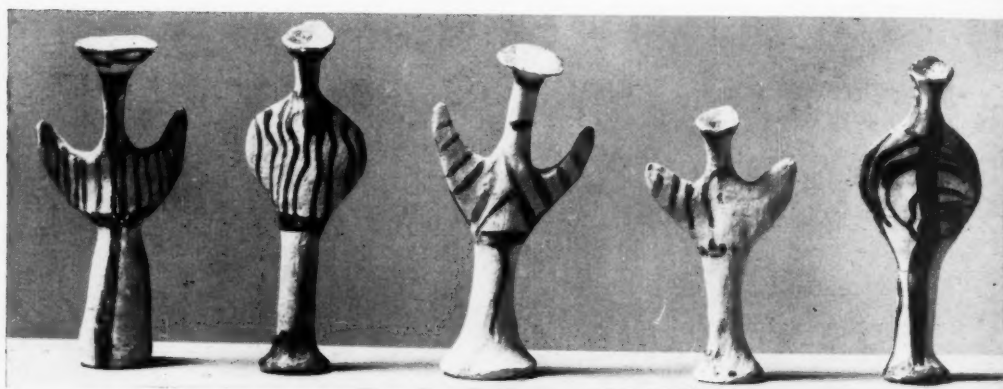
7

8

9

10

A. Front View



6

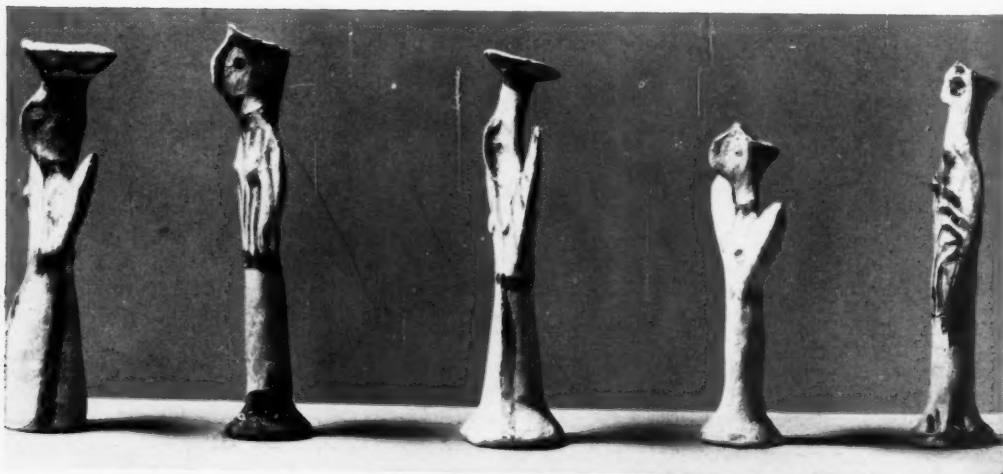
7

8

9

10

B. Rear View



6

7

8

9

10

C. Side View

FIVE LATE HELLADIC STATUETTES.
[Robinson, pp. 1-9]



THE GREEK LADY FROM PERSEPOLIS. COURTESY OF ORIENTAL INSTITUTE.
[Olmstead, pp. 10-18]

PLATE IX



THE GREEK LADY FROM PERSEPOLIS. COURTESY OF ORIENTAL INSTITUTE.
[Olmstead, pp. 10-18]



THE GREEK LADY FROM PERSEPOLIS, COURTESY OF ORIENTAL INSTITUTE.
[Olmstead, pp. 10-18]



A

"PENELOPE" COPY IN GALLERIA DELLE STATUE,
VATICAN.



B

"PENELOPE" COPY IN CHIARAMONTI MUSEUM, VATICAN.



A. HAND OF PERSEPOLIS STATUE.



C. HEAD OF "PENELOPE" TYPE IN BERLIN.



B. SPOT OF DISCOVERY OF PERSEPOLIS STATUE.



D. "PENELOPE" TYPE HEAD IN COPENHAGEN.



E. "PENELOPE" TYPE STATUETTE IN CONSERVATORI MUSEUM.



A. HAGIA SOPHIA: WEST FACADE.



B. SOUTH TURRET: SPIRAL
VAULT OF BRICK.



C. NORTH TURRET: HOLE AT
CROWN OF INNER VAULT.



D. SOUTH TURRET: BYZANTINE
ORNAMENT ON SOFFIT OF TURKISH
STAIRS.

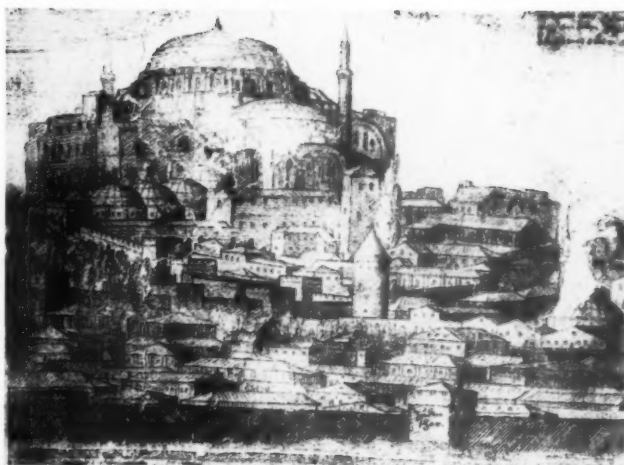
[Emerson and Van Nice, pp. 28-40]

A. HAGIA SOPHIA:

VIEW FROM NORTHWEST.

DRAWN IN 1559 BY

MELCHIOR LORICHS AUS FLENSBURG.



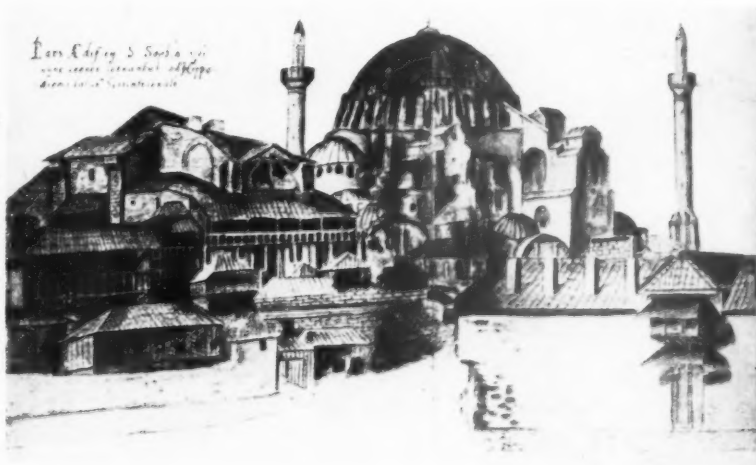
B. HAGIA SOPHIA:

VIEW FROM SOUTHWEST.

DRAWN IN 1574

BY AN ANONYMOUS ARTIST

(FROM FRESHFIELD).



C. HAGIA SOPHIA:

VIEW FROM SOUTHWEST.



[Emerson and Van Nice, pp. 28-40]



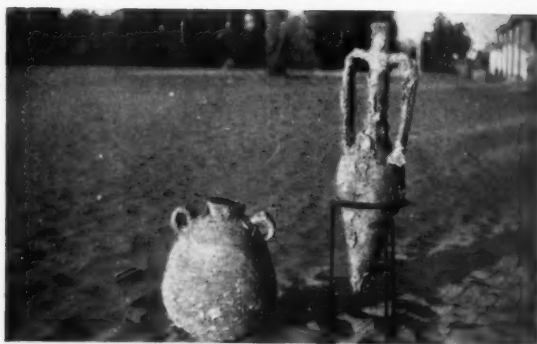
A



B



C



D



E

A. B. AND C. ARCHITECTURE OF LEVEL II, KANES, TURKEY. D. AMPHORAE FOUND IN THE SEA OFF CAESAREA, ISRAEL. E. BUILDING OF LEVEL III, KANES, TURKEY.
[Archaeological News, pp. 58-72]



A



B



C



D



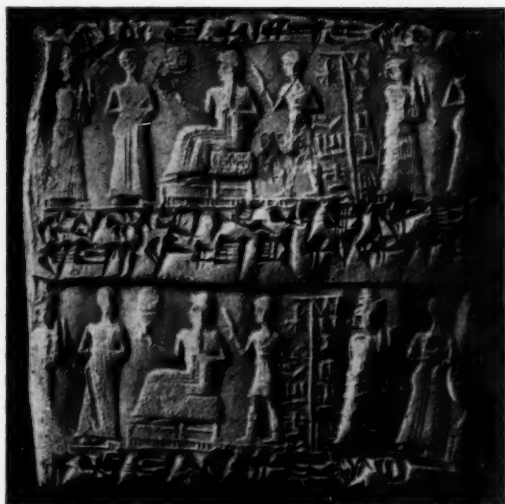
E



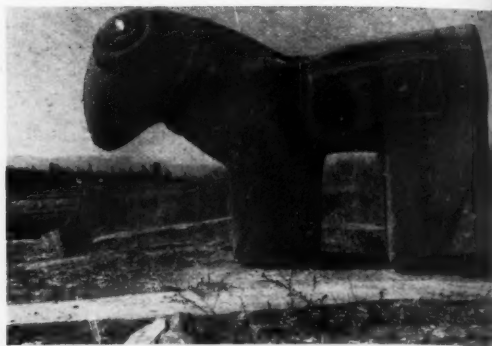
F

POTTERY OF LEVELS II-III, KANES, TURKEY.
[Archaeological News, pp. 58-72]

PLATE XVII



A



B



C



D



E



F

A. CUNEIFORM TABLET WITH SEAL IMPRESSIONS, LEVEL III, KANES, TURKEY. B. STONE ANIMAL SCULPTURE, GEOY TEPE, IRAN. C. AND D. POTTERY FROM GEOY TEPE, IRAN. E. FACADE OF PALACE AT LASHKARI BAZAR, AFGHANISTAN. F. SCULPTURED DECORATION FROM PALACE, LASHKARI BAZAR, AFGHANISTAN.

[Archaeological News, pp. 58-72]

